

COMPUTER CORNER LTD.

COMPUTER • PRINTER • LASER DISCOUNT STORE

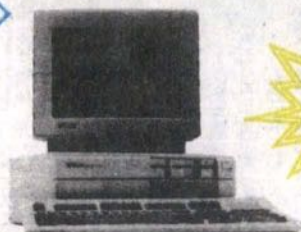
★ 684-0474 ★

— 1-800-663-6285 —
100-1500 W. Georgia St.

80286

DESKTOP PUBLISHING

AT™



\$2,388

EPSON EQUITY II+ • 30 MB HARD DISK
• 80286 MICROPROCESSOR • 12MHz • 640K RAM
• 40MB HARD DISK • 1.2MB FLOPPY • DOS 3.3
• MONO MONITOR • MONO/GRAPHICS CARD



\$2,585

HEWLETT PACKARD LASERJET II
• 8 PAGES per MINUTE • 512K • 6 INTERNAL FONTS

80386
POWER

LAPTOP PORTABLES



\$4,349

NEC POWERMATE 386
• 80386 MICROPROCESSOR • 16MHz • 2MB RAM
• 1.2 MB FLOPPY • DOS 3.2
• MONO MONITOR • MONO/GRAPHICS CARD



\$2,649

BONDWELL LAPTOP • 20 MB HARD DISK
• 80C88 MICROPROCESSOR • 8MHz • 1MB RAM
• 720K FLOPPY • 20MB HARD DISK • DOS 3.2
• BACKLIT SCREEN • 1200 BPD MODEM • EASYWORD

EPSON EQUITY COMPUTERS:

INCLUDES MONOCHROME MONITOR & MONO-GRAPHICS CARD

II+, 80286, 12MHz, 640K-R, 1x1.2MB-F, DOS 3.3/BASIC, 30MB (65MS)	2,388
II+, 80286, 12MHz, 640K-R, 1x1.2MB-F, DOS 3.3/BASIC, 40MB (40MS)	2,555
II+, 80286, 12MHz, 640K-R, 1x1.2MB-F, DOS 3.3/BASIC, 40MB (28MS)	2,755
II+, 80286, 12MHz, 640K-R, 1x1.2MB-F, DOS 3.3/BASIC, 72MB (28MS)	2,999
III+, 80286, 12MHz, 640K-R, 1x1.2MB-F, DOS 3.2/BASIC, 7 EXP. SL	2,320
LAPTOP, NEC V30, 10MHz, 640K-R, 1x720K-F, DOS 3.2, 20MB, BACKLIT	3,699

DESKTOP PUBLISHING LASER PRINTERS

H. P. LASERJET SERIES II, 8 PPM, 512K, 6 INT. FONTS	\$2,585
EPSON GQ-3500 LASER PRINTER, 6 PPM, 640K, 7 INT. FONTS	2,194
NEC LC-890 POST-SCRIPT LASER, 3MB., 35 INT. FONTS	\$4,950

EPSON SPRINTER PRINTERS:

LX-800, 9 PIN, 80 COL, 180 CPS DRAFT, 30 CPS NLQ	\$264
FX-86E, 9 PIN, 80 COL, 240 CPS DRAFT, 48 CPS NLQ	413
EX-800, 9 PIN, 80 COL, 300 CPS DRAFT, 54 CPS NLQ	590
FX-850, 9 PIN, 80 COL, 264 CPS DRAFT, 54 CPS NLQ	495
EX-1000, 9 PIN, 136 COL, 300 CPS DRAFT, 54 CPS NLQ	770
FX-286E, 9 PIN, 136 COL, 240 CPS DRAFT, 48 CPS NLQ	550
FX-1050, 9 PIN, 136 COL, 264 CPS DRAFT, 54 CPS NLQ	720
LQ-500, 24 PIN, 80 COL, 180 CPS DRAFT, 60 CPS NLQ	500
LQ-850, 24 PIN, 80 COL, 264 CPS DRAFT, 88 CPS NLQ	769
LQ-1050, 24 PIN, 136 COL, 264 CPS DRAFT, 88 CPS NLQ	1,013
LQ-2500, 24 PIN, 136 COL, 324 CPS DRAFT, 108 CPS NLQ	1,363
SQ-2500, INK JET 136 COL, 540 CPS DRAFT, 180 CPS NLQ	1,363

EGA
COLOR MONITOR
AND CARD
\$499. EXTRA
31 mm DOT PITCH

★ FREE TRAINING

★ 684-0474 ★

COMPUTER CORNER

COMPUTER • PRINTER • LASER
DISCOUNT STORE

CGA
COLOR MONITOR
AND CARD
\$250. EXTRA
43 mm DOT PITCH

The COMPUTER PAPER

BRITISH COLUMBIA'S COMPUTER INFORMATION SOURCE

Vol 1. No. 8 September 1988

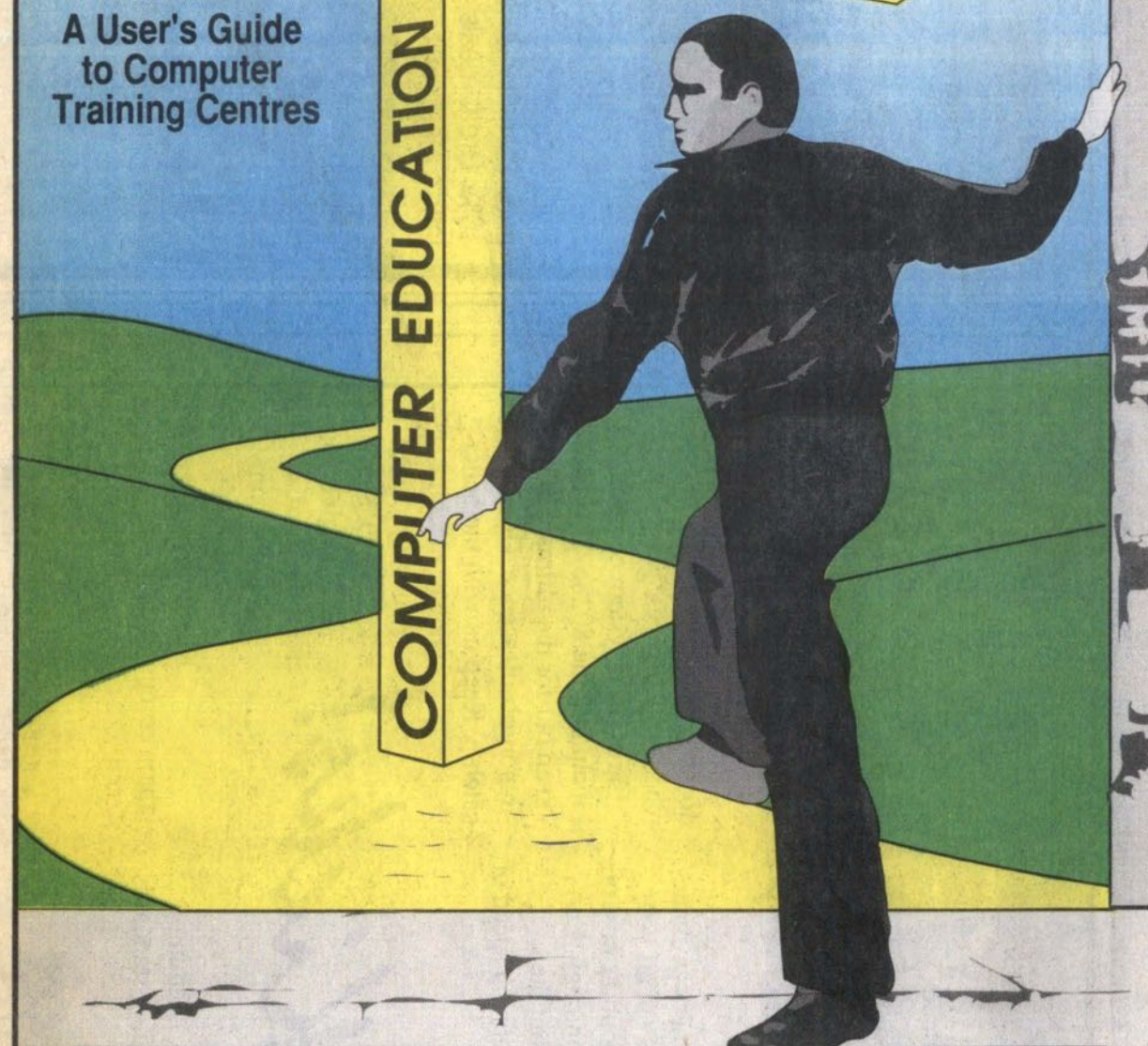
FREE

COLLEGES
DAY COURSES

TRADE SCHOOL
COMPUTER BASED TRAINING

A User's Guide
to Computer
Training Centres

COMPUTER EDUCATION



Basic Design Skills For Desktop Publishers • Special Boston
MacWorld Show Report • Using Expert Systems on the Job •
NEWSBYTES • Comprehensive Computer Course Listings •

PLUS: Doctors Teleplan II User Group Insert

THE KAYPRO 286

Here's the North American-made computer that kicks out all your old assumptions about the cost of truly advanced technology. Consider these facts about the KAYPRO 286. At its top speed of 16-MHz, the KAYPRO 286 is faster, yet less expensive than most standard 386 systems.* And with the OS/2-compatible KAYPRO 286, adapting to the rapidly changing standards

doesn't mean reinventing the wheel.

Card based system components - including the 80286 CPU board - snap out for the ultimate in built-in non-obsolescence. Don't play catch p. Keep up with the better power machine. Your Authorized Kaypro Dealer is ready to give you all the details about the complete line of Kaypro desktop and laptop computers.

Kicks!



- ★ 8/10/16 MHz
- ★ OS/2 Compatible
- ★ 40 MB Hard Disk
- ★ 1 MB RAM
- ★ Microsoft Works®



*Norton S.I. of 15.3 to 18.0. Also available with 12-MHz. Trademarks: OS/2, International Business Machines; Works, Microsoft, Inc.

Coastway Systems Technology
989 West 8th Avenue
Vancouver Tel. 736-5039

Cambridge Systems Group
#206-5060 Kingsway
Burnaby Tel. 439-7355

Island Micro
151 Beach St.
Campbell River
286-0624

Westcoast Computers
1915 Lonsdale Avenue
North Vancouver Tel. 986-7680

**Your Local
Kaypro
Dealers Are:**

Friendly Technology
1161 Melville Street
Vancouver Tel. 682-6488

Delta Computers
#101-1624 56th Street
Delta Tel. 943-3331

R. Caspell & Associates Inc.
#7515-149A Street
Surrey Tel. 597-3110

Take-a-byte Computers
#112-11511 Bridgeport
Richmond Tel. 276-2983

Micro-Vision Computers
#2C-2220 Bowen Road
Nanaimo Tel. 756-1933

Wizard Computer Systems
6082 Fraser Street
Vancouver Tel. 321-7144

KAYPRO
COMPUTERS

NOW! CURRENT COMPUTER BOOKS

IRRESISTIBLY PRICED!

Hundreds of the most recent computer books, all priced at either 20% off Canadian list or US list plus 10%. Great deals, great books at the lower mainland's most exciting bookshops!

**Book
warehouse**
BOOKS AT IRRESISTIBLE PRICES

632 W. BROADWAY, VANCOUVER
1150 ROBSON, VANCOUVER
33RD. AT COOK, RICHMOND
OPEN 10AM-10PM 7DAYS A WEEK
...and the coffee's always on us!

KAYPRO COMPUTERS WON'T GROW OLD

**PROBLEM: Computer
Obsolescence**
SOLUTION: Kaypro

Only Kaypro's XT computers can upgrade instantly to an AT or 386 computer (and beyond). At any time. Which makes it the one home or business computer with non-obsolescence built right in. And best of all, it's on sale now. So why settle for anything less?

- Made in the U.S.A.
- Unbeaten performance
- Non-obsolete upgradable motherboard
- Factory-level support in Vancouver
- IBM compatibility guaranteed
- DOS, BASIC and Word Processing included
- Rated "best buy" by Computer Guide
- Top rated by University Evaluation Report
- Top rated by PC Resource Magazine
- Top rated by PC Magazine



**Complete Systems
from \$1355
or lease-to-own**

NON-OBSOLESCENCE HAS FINALLY ARRIVED

Westcoast Computers
1915 Lonsdale
North Vancouver, B.C.
Phone: 986-7680

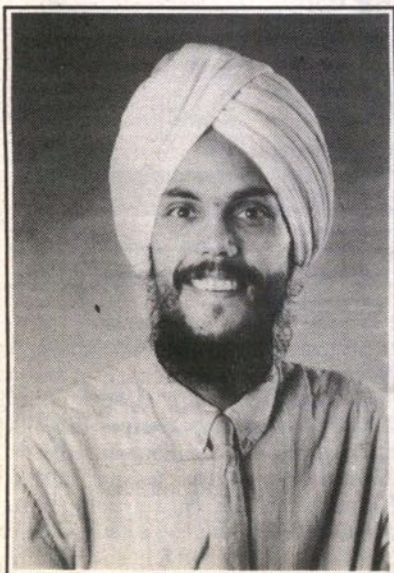
KAYPRO
COMPUTERS
The Future's Built In

The COMPUTER PAPER

BRITISH COLUMBIA'S COMPUTER INFORMATION SOURCE

Vol 1. No. 8 September 1988

FROM THE EDITOR



Summer is disappearing and our minds and bodies are coming back from the beaches and slowly resuming the work of the fall and winter. For many this year, that work will include unravelling the mysteries of a new computer or software package. This issue focuses on the variety of learning options available for those delving into the joys of computing. And joy it is too – or can be.

Computer learning, as with all learning, seems to occur best when it is effortless, when it is done with a sense of joy and fun.

If you were to ask me what I think is the best way to begin learning about computing, I would suggest that you read as much as you can in computer magazines, visit computer stores, computer shows, com-

puter user groups, friends with computers, take introductory courses and everywhere you go, ask questions – an abundance of questions to begin formulating your own concept of which computer or programs are right for you.

Ask your questions, ask your experts, but most of all, take the time to play with the computers and programs for yourself. Nothing beats the “hands-on” poking around on computers to give you a feel for which ones are the best for you. Each program is an expression of its programmers personality and each computer has a different feel.

Computers are here to stay, and they will constantly be challenging us to new learning, every time they get easier to use, some new product or software category will add a new layer of sophistication and a new set of skills will be required to use them. One time it was spreadsheets, then desktop publishing, then into the technology of scanning images or artificial intelligence and the list goes on. So the process will continue and for many of us, the learning will be life long. Remember to have fun while you are doing it. We hope this information assembled on some of the many courses, training centres and events is useful to you in your on-going learning process.

A secondary theme of this months issue is the Teleplan 2 Medical software. We had a look at things back in July and since then have gotten a lot of feedback from doctors who where interested in the article and wanted to know more. Much has happened, including an extension of the deadline for them to purchase their systems into next year and much comings and goings of vendors. A regular contributor to these pages, Daken Ariel, has taken it on to help organize a users group for the doctors. This is a much needed forum for doctors to get feedback on their colleagues' experience with the various vendors and products. Their first meeting is scheduled to include displays by a dozen vendors. A good user group can be a powerful association to convey real “hands-on” product information as well as communicating user needs back to the vendors. If you are a doctor and considering buying a medical software package, it would be well worth your while to attend.

Oh yes, we have grown again. Our circulation has gone up 10,000 to 40,000 and we have 40 pages this time – a long way from the original 16 pages in the first issue ... way back in February of this year. This translates into more news, more articles, more reviews and more listings for you. Thanks to our advertisers and your support, we are continuing to grow. Please let the advertisers who are supporting this flow of information know where you saw their ads. Tell them you saw them in The Computer Paper. Thanks.

Next month should be an interesting one, we have a number of product reviews coming on the burgeoning field of user-friendly Windows programs.

Until next issue...

Kirtan Singh Khalsa
Publisher/Editor

Coming Up in The Computer Paper:

October: Windows

Copy & Ad Deadline: Sept 17

November: Word Processing

Copy & Ad Deadline: October 22

December: CAD

Copy & Ad Deadline: November 19

Call for Advertising Rates: 733-5596

CONTENTS

6 Newsbytes

- 6 Atari
- 6 B.C. Bytes
- 6 Canadian News
- 6 CD-ROM
- 7 Chips
- 7 Commodore
- 7 Database
- 7 Desktop Publishing & Graphics
- 8 Data Storage
- 8 General Interest
- 9 Japan
- 10 LANs
- 10 Macintosh
- 11 NeXT Computers
- 11 PC News
- 11 Quotes
- 12 OS/2-PS/2
- 12 Telecommunications & FAX
- 12 The Stock Market
- 13 Unix
- 13 U.S.S.R.

Teleplan II Medical Software

- 19 Pacific Medical Software User Group
- 23 Computerization of BC's Physicians

Computer Training

- 28 A User's Guide To Training Centres
- 30 Easy Steps To Good Design
- 32 Expert Systems: Using AI in Training

Reviews & Surveys

- 14 Virus Watchers
- 16 Boston MacWorld Special Report
- 18 BEDSPREAD: A Bedford Add-In
- 31 Illustrator 88 Review
- 36 Getting Listed on the VSE

Regular Columns

- 4 Letters to the Editor
- 4 New Products: The newest products
- 33 Computer Calendar: Courses and Events
- 37 The Service Sector
- 38 The Shareware Shelf: DOS Tutors
- 39 Classified Ads
- 39 The Booksellers' Bestsellers

TO THE EDITOR

Dear Computer Paper:

I am enclosing my questionnaire for a subscription to your paper. I too have read it cover to cover (except the Mac articles) and enjoyed it thoroughly. Very interesting, high quality material.

Sincerely
S. McLaughlin

Dear Computer Paper

I am a regular reader of your magazine and find it contains much good information. And I look forward to its continuing success and growth. In the most recent issue I was also pleased, as a local SysOp, to see the inclusion of a Lower Mainland BBS list.

However, I was disappointed to note it contained a number of mistakes regarding boards, communications programs, features, etc. I found it particularly disappointing as A) the item is headed by the line "Recently Verified BBS Systems in the Vancouver area," and B) Cory Muzyka is a user on my Board.

I realize BBSs come and go, much like hair styles, and that keeping up with these changes is no easy task. But there are lists available that are more accurate than this one, and perhaps out of concern for the reputation of your newspaper, a greater effort might be placed on accuracy if you are going to carry such a list.

SysOps spend a lot of time and, in many cases, a great deal of money setting up and maintaining high-quality Boards, and it's discouraging to see them promoted inaccurately.

Therefore, for the record, I am not, nor have I ever been, nor have I any plans to ever be a PHOENIX system. HEIKO's BBS is and will continue to be a WILDCAT! board. Also, I might add that I no longer support 300 baud - just 1200 and 2400.

I would be most grateful if such a list is to appear in any future issues of your fine newspaper, that these changes are duly noted. Thank you for your time.

Sincerely,
David Hankinson
Systems Operator HEIKO's BBS

Dear TCP

I pickup up The Computer Paper from Sprite Computers and read it with great interest. Finally a good informative paper available in Vancouver for the Computer Buffs.

At last! - A Vancouver BBS List not as complete as I expected and some of the Phone numbers are wrong, so, here is the correction:
Abacus BBS 272-4311 24 hours John Gyulasi
CBM 3/1200 XModem
Big Board 272-4644 24 hours John Gyulasi
CBM 3/1200 Punter
Comm-Only 272-9222 24 hours John Gyulasi
CBM 3/1200 Punter

Look forward to see your next edition of The Computer Paper. Keep up the good work and show it to "INPUT" that Vancouver can produce just as good a paper or better.

Sincerely John Gyulasi
SysOp ABC BBS, Richmond

-Whoops, seems we got a few numbers and details wrong. Our apologies, and please heed the warning at the bottom of the list. See the classified section for some other new or corrected listings.

-Ed.

Dear Sir:

Thank you for providing an excellent information service which provides very valuable data about the North American, and more importantly Canadian computer & software situation. Your publication will be a very valuable asset in Tahsis. Andris Freimanis
Principal, Captain Meares Elementary
Secondary School Box 460 Tahsis, B.C.

Dear Computer Paper

We enjoyed your August 8 issue of THE COMPUTER PAPER very much...it was passed around the office and comments were very favorable indeed. We'll keep the copy in our reception area and I'm certain our clients will enjoy it, too.

We'd very much like to continue receiving your newspaper, particularly the September issue featuring training, which is also one of the main thrusts of our services.

Look forward to receiving your next issue.
Audrey Cooper

NEW PRODUCTS



Locally Produced Mac Hard Drive

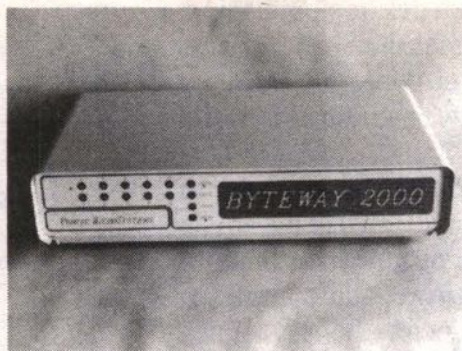
You may recall we ran a press release last month on the MACFLY line of Apple hard drives. Well we thought we would run the announcement again just so we could show you their new publicity photo of the freshly redesign logo on the unit. We apologize for making this much fuss over a mere hard drive unit, but we think that it is great that someone is actually assembling Macintosh hard drives in Vancouver, let alone in Canada. Until now virtually all Mac hard drives have been from the U.S. or elsewhere.

Adam Peripherals president, Henry Vehovec, tells us that they are using high quality Seagate drives and that they offer a range of both internal and external SCSI drives of a variety of sizes for the Mac. Apparently there is a great deal of interest in these units from a variety of government institutions because of their Canadian content.

Pictured here is their entry level 20 meg unit. They also offer a deluxe model with a built in power bar and surge suppressor - a nice looking unit.

Hard drives are just the beginning of a line of Macintosh products for Adam Peripherals. Judging from the look of these units, we can look forward to more quality Canadian content Macintosh peripherals.

The MACFLY drive is reasonably priced and available at a number of Macintosh dealers in the lower mainland including: Computer Connection, Strachan Computers and Strider Computers.



New Peripheral Sharing Device

Protec Microsystems of Montreal has come out with a new and powerful solution for those who need an easy but effective way of accessing all printers and other peripheral devices from a number of different PCs in an office, without the need to have a Local Area Network.

The Byteway 2000 is available in three port configurations to suit many different applications. Data can be automatically converted from a parallel input to a serial output and vice versa.

Every Byteway 2000 is equipped with a dynamically partitioned buffer to quickly take in each print request and free the PC user to work on the next task. Retail prices for a 64K buffer unit start at \$1089 and range up to \$3069 for a 2 Megabyte buffer.

WORDSMITHS

International Wordsmiths is helping Vancouver area firms, institutions and ad agencies connect with writers. "Everyone knows that they need better materials - better manuals, better procedures, better sales kits. But, finding writers with the expertise to produce them can be frustrating and time-consuming," says Sheila Jones, principal in Wordsmiths.

Now, for the first time, people who need good, solid writing can find it. Wordsmiths matches

senior technical and copy writers to the job. The largest and oldest writing firm in Vancouver, Wordsmiths built its reputation in the high tech field. Now, the firm is poised to expand into two new areas: procedures manuals for firms and institutions of every size, and high profile sales materials for high tech clients.

"By matching the right writer to the right task, we save our clients a lot of hassles," says Jones. "For example, we match writers with engineering backgrounds to telecommunications projects. Or, we find a procedures expert to bring order out of chaos in expanding offices."

Wordsmiths' writers work in the wordprocessing package of the client's choice and a manager oversees the project every step of the way. Wordsmiths also offers desk top publishing services and illustration for clients who want start-to-finish production.

Design Vancouver to Include DTP Contest

This isn't exactly a new product, but we thought it was of interest and it wouldn't fit elsewhere.

DESIGN VANCOUVER, scheduled between October 21 to 30, 1988, is unprecedented in North America. The first design exposition of its kind, it will showcase the skills, talent and products of the Vancouver and Canadian design industry.

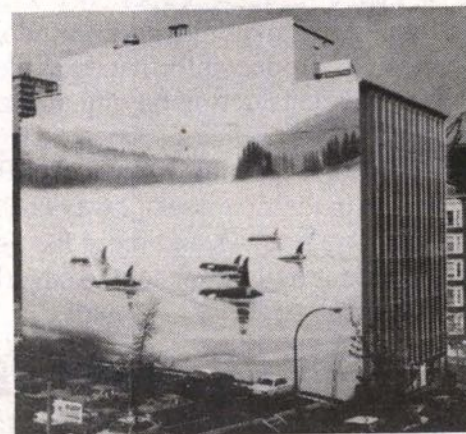
Over 35 events will take place throughout the city at the Vancouver Art Gallery, University of British Columbia, Simon Fraser University, Robson Square, Gastown, Yaletown, South Granville, Stanley Park and Granville Island.

Included in the events are:

- Business for Design/Design for Business Seminar & Exhibition at Robson Square: Graphic Designers of Canada
- A Future With Design: Simon Fraser University symposium at the Vancouver Art Gallery
- Virtu 3 Show of Contemporary Canadian Furniture: Emily Carr College of Art & Design
- The Domus Exhibit: Simon Fraser University Art Gallery
- The Walls Have Ears, Poster as Art in Vancouver: Vancouver Museum
- Exposition '88: Canadian Association of Photographers and Illustrators in Communication at the Sinclair Centre
- Craffthouse, B.C. Design for Living, Granville Island

The significance of this event is economic. The industry is young, dynamic, increasingly sophisticated and growing rapidly with a world-class reputation in several areas. DESIGN VANCOUVER will promote the design industry; public awareness of the design sector will increase and links will be forged between business and the design community. Overall, the B.C. economy will benefit through better utilization of the design resource.

Of particular interest to computer users is a design competition being held for the best black and white computer produced designs. Categories include Corporate Identity, Point of Sale, Newsletters, Magazines, Books, Booklets, Advertising, Miscellaneous. Winners and runners up in each category will receive design or computer related prizes for the best entries. Deadline for entries Sept 30, show Oct 21-30 at the World Trade Centre. For further information, Marion Munro 224-6152



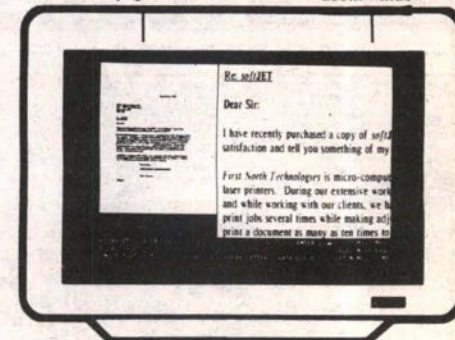
New Training Affiliation for VSC

The Vancouver Software Center has signed an agreement with Manta Computer Technologies, Inc. of Ottawa to operate an Oncourse Learning Center.

The Vancouver Software Center currently has a training room and offers microcomputer courses. The majority of the training is customized to a company's particular needs. Their target market for training is large corporations and government

offices. Having a training facility amongst a computer and software environment is a prime location for an Oncourse Learning Center, who already have contracts for training with corporations such as the Royal Bank, Canada Post and the Justice Department. By the Vancouver Software Center being part of a network of high quality training centers, companies who have offices across Canada will be able to take training in the center in Vancouver, and be at the same level of training as the rest of their offices across Canada who attend training classes at an Oncourse facility. Manta presently has offices in Ottawa, Toronto and Timmins and has been expanding its network of centers in cities across Canada to serve the increasing demand for consistent high quality training for microcomputer application software. Contact Dave Nichol at the VSC for more information 669-9800

full page draft view zoom window



Previewing with softJET

Screen Preview Utility for LaserJets

Theta Systems Corporation of Vancouver has recently announced the release of their software solution for Laserjet Plus and compatible printers. *softJET*, their new software screen preview utility, allows users to check out their output before they send it out to the printer. New features include: a larger full-page draft view, page up and go to page ability, a wider zoom window, automatic detection of graphics card and soft font downloading.

softJET is memory resident and is designed for use with applications programs which do not contain a preview capability for text or graphics. The package sells for US \$120. Registered users of previous versions can upgrade for \$29.95 US.

MASTHEAD

PUBLISHER/EDITOR Kirtan Singh Khalsa
CONTRIBUTING EDITORS Wendy Woods, Ken Maize, Dana Blankenhorn, Ken Takahashi, Naoyuki Yazawa, Grant Buckler, Steve Gold and Peter Vekinis.

CONTRIBUTING WRITERS: Gordon Simmonds, Mary Kletchko, Marie Burlinson, Ken Robertson, Ingrid Harris, Nelson Reust, John Spilker

ART DIRECTOR: Rosemary Anders,
Cartoons by Graham Harrop

TYPESETTING: Glacier Press

COVER DESIGN & ARTWORK: Illustration by Larry DeFehr of Artbase

ADVERTISING MANAGER:

Kirtan Singh Khalsa

ADVERTISING SALES:

Larry Galvin

EDITORIAL ASSISTANT: John Oliver

PRODUCTION: Ward Stirrat

DISTRIBUTION: All Citi Flyer Distributors

PRINTER: Valley Web Graphics

SUBSCRIPTIONS:

The Computer Paper is published monthly. If you would like the Computer Paper mailed directly to your home, please send a cheque for \$14 to 3205 West 13th Avenue, Vancouver B.C. V6K 2V6 Telephone (604) 733-5596. This will cover mailing and handling for 12 issues in Canada. American subscriptions please send \$25.

This is Volume 1, No.8 September 1988

The Computer Paper, British Columbia's Computer Information Source is published by: Canada Computer Paper Inc. © All rights reserved. Reproduction in whole or in part without the permission of the Publisher is strictly prohibited. Unsolicited material is gratefully accepted, but we can't be responsible for returning it unless it is accompanied by a stamped self-addressed envelope. Submissions are preferred on 5 & 1/4" Diskettes in ASCII (text) format or Mac disks.

CIRCULATION: 40,000

2nd Class Postage Registration Number 7718
Printed in Canada.

Canada Computer Paper Inc.

3205 West 13th Avenue

Vancouver B.C. V6K 2V6

Phone Number: (604) 733-5596

COMPULIT DISTRIBUTORS INC.

Learn to use the popular accounting package from Bedford Software Inc. through this practical workbook.

NOW AVAILABLE A BOOK ON BEDFORD

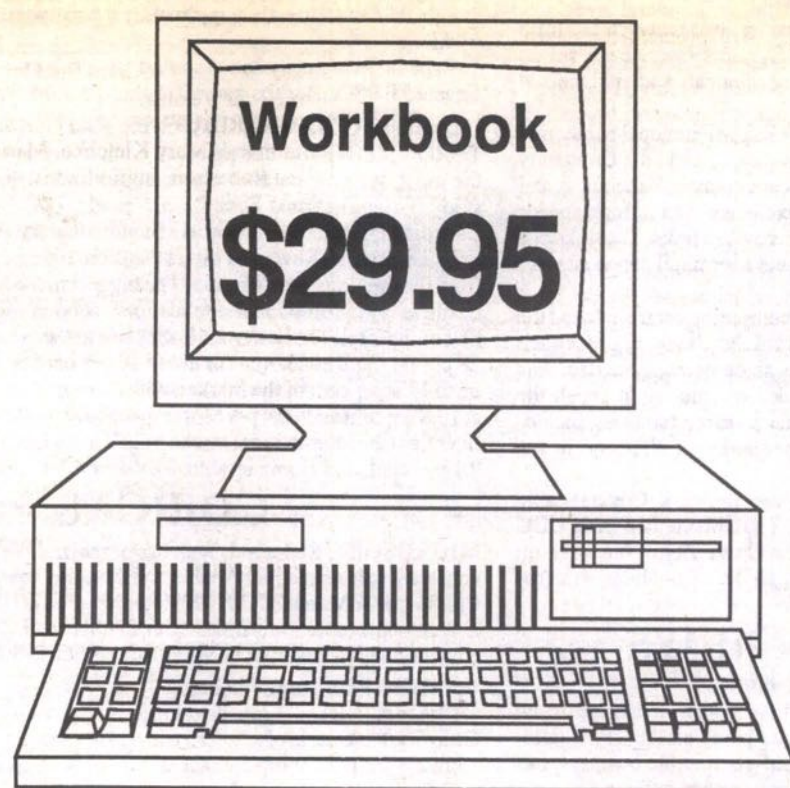
This workbook provides applications for all modules of Integrated Accounting. The accounts payable, accounts receivable, payroll, inventory and jobcosts.

There are 11 applications which allow the readers to proceed directly with transactions using accounts already developed and stored on the accompanying disk. Keystrokes are provided for the first transaction of each application and each application builds on the previous one.

This easy-to-use workbook is a must for any business person or student who wants a quick and practical way to learn one of Canada's best-selling software products.

D. Purbhoo is a teacher of accounting and data processing at Eastern High School of Commerce.

L. Borel is the Director of Business at Lester B. Person Collegiate Institute.



SYSTEM REQUIREMENTS

Bedford Integrated Accounting Package
IBM PC or compatible
5 1/4" Disk Drive

Learning Bedford

Applications Workbook

bedford

**LEARNING BEDFORD
INTEGRATED ACCOUNTING:
An Applications Workbook**

D. Purbhoo and L. Borel

Distributed by: COMPULIT DISTRIBUTORS INC.
Port Coquitlam, B.C.,

LIQUIDATION NOTICE!

**Contents of Computer Store
Must Go Regardless of Cost**

Computers
including 2 drives
\$495.00

AT/XT Keyboards
\$39.00

AT Motherboards
from
\$299.00

XT Motherboards
from
\$79.00

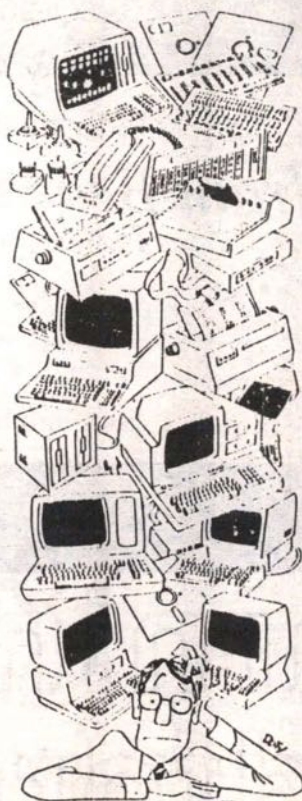
Citizen Printers
(180 cps)
\$249.00

20 MB Hard Drives
\$285.00

30 MB Hard Drives
\$325.00

TTL Monitors
\$89.00

Internal Modems
(2400)Baud
\$195.00



**EVERYTHING DISCOUNTED !!
FULL MFG WARRANTY
NO REASONABLE OFFERS REFUSED**

1440 KINGSWAY

VANCOUVER

Personal Shopping Only. Open daily 10 AM to 6 PM
Information Line Only: 872-3225/26

New Headache for Canada's Chartered Banks

Spells Relief for Canadian Business

The Accounting Master Payroll Program may spell the end of the chartered banks domination of the payroll processing market for many small and medium sized businesses. Now business owners can complete their own payroll in house, and save a bundle on bank charges and interest.

To make matters better (or worse for the banks), less work is involved in using Accounting Master to complete a payroll, than in filling out forms for the bank.

The company's money can earn interest for the company *not* the bank. Again, providing big savings for the small to medium sized business particularly if a large overdraft is involved.

Accounting Master Inc., of Suite 163-2619 Alma St, Vancouver has introduced the definitive payroll program for the IBM and compatible computers. This easy to use program does it all for you. T4's, employee separation reports, journals, cheques, pay advices, and detailed job costing are just some of the reports it handles. It even exports directly to ACCPAC™ general ledger, but saves the complex set up time often associated with ACCPAC's own payroll program.

Until now payroll software for personal computers has been either too simple to handle more than the most straight forward situations, or too big and expensive to set up. Accounting Master promises to be the best solution possible, it is easy to learn and inexpensive to buy and maintain.

The manual documentation does an excellent job of bringing the user quickly up to speed on everything needed to run a payroll. You probably will never need it, but it is nice to know that free support is always just a phone call away.

Investigate and you will be surprised at how much money can be saved.

Accounting Master can be reached at:

Accounting Master Inc.
Suite 163-2619 Alma St. Vancouver V6R 3S1
Telephone: 291-6016 or 738-8109

Advertisement

NEWSBYTES

ATARI

ATARI (0753-33344) is said to be developing a hand-held PC, according to MICROSCOPE, a UK computer trade weekly. Details of the machine are scarce, but it expected to be similar to the Psion Organiser II, and be MS-DOS compatible...

ATARI, Sunnyvale, Ca., reports disappointing earnings but a doubling of sales compared to this time last year. Income was down 59% to US\$5.6 million even though revenue soared to US\$164.6 million, an increase of 133 percent. Atari blames the sour earnings on its Federated unit which continues to lose money.

Atari: Super ST Due?

MAIDENHEAD, BERKSHIRE (NB) — Just when you thought it was safe to buy an Atari ST or Commodore Amiga, along comes the rumour mill with a super ST, capable of everything the Amiga does, but with the ST's low pricing and wide software base.

According to the latest COMPUTER TRADE WEEKLY (CTW), the super-ST will be capable of displaying 4,096 colours on-screen simultaneously (the same as the Amiga) and support stereo sound, as well as multitasking and fast horizontal and vertical scrolling screens. And all this for 399 British Pounds.

What does Atari UK say to all this? Nothing. Atari UK MD Bob Gleadow is quoted as knowing nothing about the machine. He did, however, know a lot about the laptop ST (code name Stacey) when NEWSBYTES UK talked to him at the last Atari computer show.

Let's look at the facts. Atari has developed prototypes of several variations on the ST in the past. Some have made it to market. Many haven't. Atari is, however, committed to the ST series which now has a wide software base, both in Europe and the US. On this basis, the Super-ST is likely to be a souped-up version of the existing ST, using 1Mb DRAM chips to provide memory at lower cost, and feature improved graphics and sound - the features it needs to meet the Amiga head on.

And what about the existing ST range? To accommodate the #399 pricing on the Super ST, NEWSBYTES UK predicts that the 100 British Pounds price hike (to 399 British Pounds) of last February will be reversed, leaving room for the Super ST to manoeuvre.

B.C. BYTES

BEDFORD SOFTWARE of Vancouver says its "Comfort Card" guarantee will ensure that anyone who buys its small business accounting software gets the current version. Customers will be asked to complete the card that comes with each package and return it to Bedford. If the version number on the card isn't that of the current version, Bedford will send out a replacement free of charge.

Hi-Capacity Network Links UBC, SFU

VANCOUVER (NB) — Three universities, two research facilities and the British Columbia Advanced Systems Corp. have set up BCnet, a high-capacity network linking scientists and engineers at the six sites.

B.C. Advanced Systems Corp., the TRIUMF national subatomic research laboratory, Microtel Pacific Research Ltd., the University of British Columbia and Simon Fraser University in Vancouver, and the University of Victoria, can now exchange data at high speeds over coaxial cable, optical fibre and microwave links. The links can also handle interactive video and connect a terminal at one site to a computer at another.

The University of British Columbia computing centre hatched the idea in 1986, and got initial funding from the Universities Council of British Columbia. That council has since been disbanded. The B.C. Advanced Systems Corp. provided the money to finish the project. There are plans to connect other research facilities, including the Dominion Astrophysical Observatory in Victoria, in the future.

BCnet is a wide-area extended Ethernet network. Coaxial cable links the two Vancouver universities. TRIUMF is tied in to UBC with a fibre-optic connection, while the University of Victoria, on Vancouver island, communicates through B.C. Telephone's microwave facilities.

CANADIAN NEWS

Semi-Tech Buys Canada Systems Group

MARKHAM, Ont. (NB) — It's official. A company that began in the early 1980s making a personal computer based on the CP/M operating system, and later got into the IBM-compatible business, has become Canada's largest data processing service bureau.

On August 16, International Semi-Tech Microelectronics Inc. announced it has a final agreement to buy Canada Systems Group of Toronto, one of Canada's top service bureaus. The announcement comes as loose ends are still being tied up on Semi-Tech's purchase of Datacrown Inc., another of the country's largest service bureaus.

International Semi-Tech said it will integrate the companies. Combined, they are expected to have annual sales of more than C\$200 million to more than 700 customers across the country. That would give International Semi-Tech about the sixth-largest revenues from computers and data processing among Canadian companies — up from 87th in the 1987 ranking by Evans Research Corp. of Toronto.

Lotus Getting Serious In Canada

TORONTO (NB) — Colin Wyatt, the first general manager of Lotus Development Canada, says he has a mandate to expand the company's presence in Canada, and he's doing it. Wyatt joined the company last month, and one of his first acts has been to start hiring. Lotus is

advertising eight jobs, from sales representatives to national retail and corporate accounts managers. Filling those jobs would increase Lotus's Canadian staff by nearly half, from 17 to 25, and expand its presence from Toronto to Montreal and Calgary.

Wyatt told NEWSBYTES CANADA further expansion is probably in the cards, but "it's almost too early to tell right now." But he did say he is working on a plan to make the Canadian operation a full subsidiary of Lotus Development Corp., not just a branch office. Offices will probably open in more Canadian cities in the future, Wyatt added.

CRTC Crunches Free Enterprise

OTTAWA (NB) — Call-Net Telecommunications Ltd. of Toronto is providing competitive long-distance service, the Canadian Radio-television and Telecommunications Commission has decided. That's illegal in Canada so on August 16 the CRTC told Call-Net to cut off service to its 800 customers by the weekend.

The CRTC ruled last November that Call-Net's service was a basic long-distance service and must stop. The company argued that its service — it provides long-distance service on lines leased from Bell Canada and CNCP Telecommunications and gives its customers reports listing their outgoing telephone calls — was an enhanced telephone service, which is allowed. The federal cabinet intervened to keep Call-Net in business. But the CRTC, after holding hearings on the subject, reaffirmed its ruling.

Mike Kedar, president of Call-Net, did not return NEWSBYTES CANADA's telephone calls. A Call-Net representative said a press release would be issued Aug. 18, but called on that day to say the release had been cancelled. Kedar was reported to be considering legal action to keep the company in business.

Fraud Trial For Clubsoft Owner

TORONTO (NB) — The owner of a Toronto store that rented copies of commercial software to customers for evaluation will stand trial for fraud, probably early in 1989. Clubsoft International Corp. was raided in April and its owner, James Leahy, has been charged with seven counts of fraud over C\$1,000. A trial date is to be set December 5.

The courts have imposed a publication ban on evidence from the preliminary hearing, and Leahy told NEWSBYTES CANADA, through a Clubsoft employee, that he could not comment on the case.

CP/M Operating System Dying Out

TORONTO (NB) — Canada Remote Systems, a large Toronto-based bulletin board system, has decided to stop offering limited memberships to users of the CP/M operating system. The limited memberships allow users without modems to order public-domain software by mail. Canada Remote says that because of the diminishing importance of CP/M it will no longer offer CP/M disks by mail.

Existing CP/M limited memberships will be honored until they expire and CRS will continue offering CP/M software on-line for as long as it's available. But, sysop Jud Newell writes in the CRS members' newsletter, the supply of CP/M software has slowed to a trickle.

Canada Remote Systems started in 1977 as a purely CP/M-oriented BBS, under the name Toronto RCP/M Systems.

Canadian PC Market Still Growing Fast

TORONTO (NB) — The personal computer market is still one of the most dynamic parts of the computer industry, according to a study by International Data Corp. Canada. IDC says the over-all Canadian PC market grew by a little more than 20 per cent in 1987, to 529,800 units. Revenues hit C\$1 billion, rising some 30 per cent from the previous year's figure. The biggest market segment is still business and professional applications, accounting for more than half of the total. The home and hobby market accounted for another 28 per cent and education for about 10 per cent of sales. IBM held on to 17.9 per cent of the market, with Commodore and Apple next at 10.8 per cent and 10.4 per cent respectively. Following these were InterTan (the international marketer of Tandy Corp. products) with 9.1 per cent, and Compaq with 4.2 per cent.

CD-ROM

MICROSOFT, Redmond, Wa., has organized the next CD-ROM conference. It's slated for Anaheim Hilton and Towers in Anaheim, California for March 28-30, 1989. Registration is US\$950, US\$750 if received before December 15th of this year. For further info contact Sherrie Eastman at Microsoft, 206/882-8080.

CD-ROM Publishing Package

OTTAWA (NB) — Tools developed by Fulcrum Technologies of Ottawa are the basis of LaserRetrieve, Hewlett-Packard Co.'s new software for publishing and accessing information on CD-ROM.

Fulcrum spokesman David Dow said Fulcrum has sold its FullText collection of CD-ROM software tools to a number of original equipment manufacturers (OEMs) who have incorporated FullText in their own products. But he said Hewlett-Packard is the first to package the tools in a product designed to let others publish information on CD-ROM.

CCINFODISC Goes International

HAMILTON, Ont. (NB) — The International Occupational Safety

NEWSBYTES by Wendy Woods (Western USA), Ken Maize (Eastern USA), Dana Blankenhorn (South & Midwest USA), Masayuki Miyazawa and Keizo Yamamoto (Japan), Grant Buckler (Canada), Steve Gold (UK) and Peter Vekinis (Europe)

Copyright © 1988 NEWSBYTES

NEWSBYTES Canadian bureau chief is Grant Buckler, Source ID JP2008, PC Canada ID PC1176, voice (416) 285-0644, 859 Kennedy Rd., #203, Scarborough, Ontario M1K 2E3.

and Health Information Centre will offer a Canadian-developed compact disk reference tool internationally. CCINFOdisc, which consists of 24 data bases, technical publications and information packages on health and safety, was developed by the Canadian Centre of Occupational Health and Safety (CCOHS).

The CCOHS has also announced the completion of videotex training packages in the native languages Inuktitut and South Slavey for use in Canada's Northwest Territories.

CHIPS

NEC ELECTRONICS, Mountain View, Ca., is debating whether to expand its Roseville, California plant in order to manufacture one megabit DRAM chips. Currently only 256K DRAM chips are produced at the plant. A decision should be made soon.

NEC To Produce 4MB Chips

TOKYO (NB) — NEC has announced its 4M DRAM production schedule. According to this long-term plan, production and shipment of commercial samples will start in January 1989 at Yamaguchi NEC, with output amounting to a few thousand units per month.

Hiroshima NEC will participate in the production starting in early 1991. This is NEC's chance to beat rival Toshiba which has gotten the jump on NEC in the 1 megabit DRAM business.

But Toshiba isn't NEC's only rival. Competition in the 4M DRAM market is already heating up between these players and Fujitsu, Hitachi and Mitsubishi. Meanwhile, Sharp has also entered the race with the development of technical sample of 4M DRAM chips and says it is prepared to ship its products at the same time.

White House To Ease Chip Sanctions

WASHINGTON (NB) — The Reagan Administration has moved to relax anti-dumping penalties in order to encourage sales of Japanese DRAM chips in the U.S. The action is a bid to ease the shortage of memory chips that has sent U.S. computer prices soaring in recent months. The chip sanctions, applied in June 1986, were supposed to stimulate U.S. chipmakers to increase production of domestic memory chips. But that hasn't happened and U.S. production of RAM chips remains quite low. Texas Instruments and Micron Technology, the only two U.S. companies that sell DRAMs on the open market, have been cleaning up during the shortage.

The action from Washington comes as the memory shortage is beginning to show some signs of ending. Spot prices for 1-megabit DRAMs have fallen to US\$37 in July from US\$47.50 in April, according to Dataquest Inc., a market research firm in San Jose, Ca.

Ironically, the chip crunch has even hit Japan, where NEC has had quality control problems on its chip lines and Hitachi has been slow to recover from an earthquake which damaged its chip-making capabilities. According to the Associated Press, Toshiba, the world's largest producer of 1-megabit DRAMs, sends more than 60 percent of its chips to the U.S., although the company's computer unit in Japan is short of memory chips.

COMMODORE

Amiga Sales Save Commodore

WEST CHESTER, Pa. (NB) — The technically nifty Amiga computer is finally making a big impression on the bottom line at Commodore International Inc. Commodore has reported a six-fold increase in profits for the fourth quarter, and doubled earnings for the year ended June 30. According to Chairman Irving Gould, U.S. sales rose in the fourth quarter, the first time in two years. The U.S. accounts for about 20 percent of Commodore's sales. According to Commodore, the Amiga is selling well in corporate art and design shops, where it is a strong performer in desktop presentations.

Commodore said fourth quarter profits rose to US\$12.2 million (38 cents per share) on sales of US\$215.2 million. The prior fourth quarter saw earnings of US\$2.1 million (six cents per share) on revenues of US\$190.4 million. For the year, profits hit US\$55.8 million (US\$1.75 per share) on sales of US\$871.1 million, compared to profits of US\$28.6 million (89 cents per share) on US\$806.7 million in sales.

Commodore Loves Amiga

TORONTO (NB) — The Commodore Amiga is a big success. That at least was the message Commodore Business Machines presented to a group of journalists at a recent press breakfast. Jim Dionne, president and general manager of the Canadian operation, said Amiga sales have climbed

to about 45 per cent of Commodore's total revenues in the three years since the machine was introduced. He added that Commodore's Canadian operation hopes to top C\$100 million in sales this year — a figure the company has topped before but fell below again in recent years. The Amiga's success is mostly in niches, though. Major users that Commodore named were primarily those who could use the computer's impressive graphics and sound capabilities, including advertising agencies, community colleges, and B.C. Place in Vancouver, where an Amiga runs the sports stadium scoreboard. However, Dionne spoke of developments in the next few months that he said "will make the Amiga 2000 a lot more interesting" to corporate buyers. Among these will be an 80286 coprocessor board, a new release of the operating system (AmigaDOS 1.3) with an improved filing system and the ability to boot from the hard disk (and about time, too!) and — though Dionne was coy about this — the blessing of a major software vendor. Commodore says it has sold more than 600,000 Amigas. That's decent, but then again IBM recently announced the sale of the two-millionth PS/2, a machine half the Amiga's age, and Commodore also says some 12 million units of its venerable 64 have been sold. Commodore also trotted out some figures from Evans Research that place it as number three in the Canadian PC market, after IBM and Apple, and a surprising number two in sales of MS-DOS computers, with IBM first and Tandy third in that segment.

Aegis Development, Santa Monica, Ca., is shipping their new desktop presentation product for the Commodore Amiga, Lights! Camera! Action!. The program combines pictures, animation, sampled sounds, and music into complete slide-show presentations. It retails for US\$80.

Ontario Revises Educational PC Specs

TORONTO (NB) — The Province of Ontario announced July 26 a new set of specifications for educational microcomputers. The rules, which govern which machines a school may purchase to be eligible for substantial subsidies from the provincial government, have been adjusted to allow more machines to get approval and to lay more emphasis on portable software. Changes include more flexible rules about Canadian content and revised memory and storage requirements. The provincial Ministry of Education intends to support the development of a common software environment, which all approved machines will have to support, so that applications will be portable. Only two systems qualified under the old rules. They were the Icon, developed by Toronto-based Canadian Educational Microprocessor Corp. and now marketed and supported by Unisys Corp., and the EdNet system developed by IBM Canada Ltd. Under the new regulations, Commodore Business Machines Inc. is hoping to win ministry approval, and other manufacturers should have a good shot at it. Among the requirements: the BASIC, PASCAL and Logo programming languages must be available; the systems must have networking capabilities; minimum memory is 284K bytes; keyboards must provide cursor control keys, a minimum of 10 function keys and a numeric keypad; and each system must be equipped with a mouse or a trackball pointing device. Other requirements deal with ease of use, training, support and ergonomics.

8 Computers of Commodore Line In Top 10
MUNICH, GERMANY (NB) — CHIP, Germany's most widely read computer magazine, reports that its recent survey shows the Schneider 1640 is the top-selling micro for the third month in a row. The second position is held by the Apple Mac II, followed by the Commodore PC20, the PS/2 Model 30, the Commodore Amiga 2000, the Commodore PC40, the Schneider PC2640, the PS/2 Model 60, the Zenith EasyPC, and the Plantron PT286AT. In the home computer segment, the Commodore 64 is still number one (where it has been for the last three years), followed by the Amiga 50, the Amiga 1000, and the Schneider CPC464. For those who keep count, Commodore thus has 8 products in the first ten positions from both the home computer market and the PC market.

DATABASE

ASHTON-TATE has told its UK dealers to expect dBase IV sometime during October. The long-awaited rework of dBase III was originally announced last February for shipment in July. Last April, A-T announced a revised shipment date of September. The October release date could be third-time lucky for Ashton-Tate...

DESKTOP PUBLISHING

& GRAPHICS

MICROGRAFX, Richardson, TX, added four Clip-Art libraries, ready-to-use pictures under Microsoft Windows at US\$80 each, or US\$250 for the set. Choose from Anatomy, Sports, Business Forms, and Headline Typefaces. Micrografx also got a big write-up in "Infoworld."

Software Based PostScript Clone

BILLERICA, Mass. (NB) — Custom Applications Inc. has announced a software interpreter that will read PostScript files and print them on ordinary printers. The US\$495 product, Freedom of Press, will offer 35 fonts, through either BitStream's Fontware or Compugraphics IntelliFont fonts. CAI President Jeff Moore says, "Freedom of Press will change the way people conceive of using the PostScript language. By eliminating costs as the determining factor, overall use of this powerful page description language will increase greatly." The product supports a variety of 24-pin dot matrix printers, ink jet printers from H-P, Siemens, and Canon, and laser printers including the H-P LaserJet Plus and Series II, the Canon LBP8-II, Olivetti PG-108, and the J Laser card. The software runs on ATs, PS/2s, and 386 machines. According to Mark Hastings, vice president of sales and marketing, the product will run on XT's, but it is very processor intensive, and will run very slowly. Freedom of Press is set for delivery in late September.

Conic Splines For The PC?

DALLAS, Tx (NB) — Imagine that you are standing on a long, slender steel beam and deforming it with the force exerted by your mass. Spline-fit algorithms describe the way such a beam would deform under specific coefficients and moments. Wait. What's that got to do with anything? Well, it has plenty to do with desktop publishing. (It may also have something to do with your eating habits.)

Many business-computer users are familiar with a special class of these algorithms called Bezier curves. They're the algorithms used to define the curves in many of the fonts used by Postscript. Actually, they can be used to define many curves besides those in letters; they can also define the curves in art. Don't take my word for it. Ask Computer Support Corporation, publisher of the Arts and Letters software series.

Arts and Letters Editor will be the first graphics-editing package for the IBM PC to feature conic splines. Similar capabilities are already available for the Mac in Adobe Illustrator. Editor also uses Bezier curves to size drawings to any scale required with the same superior results obtained by outline fonts. Encapsulated Postscript output is available for transfer directly into Postscript documents or the program can output directly to a Postscript device. Expect to see the release in about six weeks.

IMSI Buys TurboCAD

SAN RAFAEL, Ca. (NB) — IMSI, best known for its PagePerfect program for the PC, has merged with Milan Systems America of Atlanta, Georgia, in what company officers call a cashless exchange of stock. Milan Systems publishes the TurboCAD program, the leading computer-aided design software for PCs priced under US\$500. "We expect to plug TurboCAD right into our distribution channels," IMSI President Geoffrey Koblick told NEWSBYTES. IMSI, a publicly traded company, is on the acquisition trail, having purchased ByteCom last year. IMSI's products are aimed at the PC graphics and desktop publishing market.

Super Workstations At SIGGRAPH

ATLANTA (NB) — Siggraph (Special Interest Group - Graphics), the large computer graphics show, replaced the Democrats in the Georgia World Congress Center August 1-5. An estimated 20,000 computer graphics devotees of all types — engineers, doctors, scientists, and artists — saw new "super-computers" designed solely for graphics. There were new versions of all the old standby workstations, putting the latest chips and most user-friendly operating systems on their desktops. And there was talk but no agreement for standards. In one corner, Sun Microsystems and its allies promised their Sun OS will become Unix System V with Open Look (a Big Mac operating environment that would work with any computer known) Real Soon Now. In another corner, Apollo with its allies (including DEC, H-P, IBM, etc.) promised their Open System Foundation standards (just like Open Look, only better) will be followed once they're made, maybe by early next year. (They want proposals September 26, they'll start meeting and deciding November 1, and the committee

- ☛ Maintenance Contracts
- ☛ Industrial Applications
- ☛ Top Quality Up-grades & Add-ons
- ☛ Individualized Services & Security
- ☛ Professional Computer Service & Repair

Boss Computer Electronics
All work is guaranteed

B.O.S.S. Computer Electronics

Complete Computer Care
Top Quality Professional Work
24 Hour Service

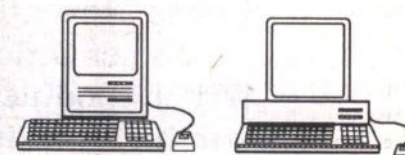
526-2871

RENT A PERSONAL COMPUTER

ENJOY THE BENIFITS WITHOUT THE RISK

STUDENTS!
ask about our
BACK TO SCHOOL
SPECIALS

- ☐ DAILY
- ☐ WEEKLY
- ☐ MONTHLY
- ☐ OR LONGER



ABILITY COMPUTER RENTALS
681-7032

Ste. 501 — 1190 Melville St.,
Vancouver, B.C. V6E 3W1
(A division of Sash Consulting Group Inc.)

OCT
22 & 23
9:30 - 9:30 10:00 - 7:00

THE CONSUMER'S COMPUTER SHOW '88

AT
THE FORUM
PNE

EXHIBITORS
SIGN UP
NOW!



BUY
SELL
TRADE

Participate in this exciting Computer Show Bringing Consumers and Commercial Dealers together under one roof for maximum benefit.

DEALERS

- Benefit from a large buying audience.
- Realize sales in this perfect mix of first time buyers, business users, and power users.
- Sell your Services, Repairs and Computer Courses.
- Clear out your surplus inventory.
- Sponsor a Lecture or Seminar and benefit from a second advertising tool.
- You have the benefit of over \$40,000 worth of mass advertising to attract the thousands of customers you want!
- Approximately 150 exclusive dealer booths available 10' by 10' booth \$600.

CONSUMERS & USERS

- First time buyers? Or upgrading?
- Select from a variety of good used systems or purchase brand new systems from exclusive dealers!
- See what's new in peripherals and software.
- Benefit from many buyers who see your good used system as their "new" system.
- Demonstrate what your system can do and sell it.
- Wheel & deal on your 2' by 8' table \$50 (max. two complete systems per table).

Pre-registration deadline
September 22, 1988
Call 438-2677

Produced by:
WESTCOM PROMOTIONS
Co-sponsored by:
Computer Paper/Computer Empire

GENERAL
ADMISSION
\$5

Limited Booths & Tables
REGISTER NOW!

Jump

software ltd.

Putting microcomputers to work for your business.

Don't be led down the garden track!

Contact **JUMP SOFTWARE LTD.** and find out about the **IMPACT** and **INMASS** software packages. Find out about their integrated Purchase Order, Bill of Materials, Manufacturing and Finished Goods Inventory, Work Order, Customer Order, MRP, and Report Writer modules. Find out about our highly rated implementation and training services.

We have excellent references and only do professional quality work.

Call: Wesley Kenzie, Robert Fisher, Stephen Schramm, Cliff Enquist, or Ken Greenlaw at:

will announce the winners of the Great Contest when they're agreed upon, Real Soon Now.) In a third corner, Apple had the Real Macintosh, the finest parties, and promises of more powerful Macs Real Soon Now.

Alliant Pixar, H-P:SIGGRAPH News
ATLANTA (NB) — The major product announcement was by Alliant Computer Systems, Littleton, MA, a "mini-supercomputer" maker which bought Raster Technologies, makers of a popular graphics package on the Sun OS, in June. The Visualization Series is the result, a line of graphics machines (priced from US\$75,000-1.8 million) which combine Cray-like computing power, Sun graphics power and Mac-like ease of use. Pixar, San Rafael, CA, (owned by Steve Jobs, Ross Perot, formerly owned by George Lucas) showed developers' kits for its graphics interface, Renderman, and plans to connect Pixar image computers (descended from the machines which made "Star Wars") with the Apple Mac. Pixar also showed a splendid list of companies "endorsing" the Renderman Interface, including both Sun and Apollo, as well as Digital Equipment and Walt Disney. Typical of the new workstations on display was Hewlett-Packard's Model 835 TurboSRX Animation Superworkstation. Priced from around US\$68,000, it offers an 8-knob, 2-button input device, a 20-function key keyboard, a 9-button mouse, and a huge color screen. You can make weather maps with it, model molecular interactions, or design in 3-D with it. And of course it's backward-compatible with all their old equipment.

New Version Of Interleaf For Mac
CAMBRIDGE, Mass. (NB) — Interleaf Inc. has a new version of its high-end desktop publishing software, Interleaf Publisher, for the Macintosh II. Version 3.5 supports the Apple Font Manager, can convert typed-in text to graphic fonts that can be sized, stretched, rotated, and filled/ and can run under Multifinder. Also, the new version of Interleaf Publisher makes it easier for the Mac to share documents with all the other platforms the program runs on, including engineering workstations from Apollo, Digital Equipment, IBM, and Sun. "The new release of Interleaf Publisher for the Macintosh II demonstrates our ongoing commitment to the powerful Macintosh platform, a commitment we plan to continue into the future," says Interleaf President David Boucher. The price is US\$2,495, the same as version 3.0. Upgrades for registered 3.0 users are free.

INTERLEAF, INC., Cambridge, Mass., has reported earnings of US\$109,000 (a penny per share) on revenues of US\$17 million for the first quarter of 1988. That compares to earnings of US\$534,000 (five cents per share) on sales of US\$10.5 million in the first quarter of 1987. The company sells computer publishing systems.

Canadian Mags Use DTP

TORONTO (NB) — Desktop publishing is taking its place in the publishing industry in Canada. While DTP technology has been used in some publications for some time, there seems to be a rush to the technology lately. Apple Canada Inc. has recently been sending out copies of **SMALL BUSINESS**, a Toronto-based national monthly magazine that just started using Macintoshes to produce its issues. **SMALL BUSINESS** is published by Maclean-Hunter, one of the largest Canadian publishing houses. It was affiliated with the **FINANCIAL POST** until Maclean-Hunter sold the business newspaper to Toronto Sun Publishing, in which it owns a minority interest. With the change of ownership and the **POST**'s move to daily publication in February, **SMALL BUSINESS** lost the use of the Atex computer system it had shared with the **POST** — thus the move to Macs. **SMALL BUSINESS** says it is the first national magazine in North America, and possibly the world, to be produced entirely on a desktop publishing system. Others are moving into DTP as well. According to officials of **Commodore Business Machines**, a Montreal city magazine, **MONTRÉAL CALENDAR**, is installing Amigas for desktop publishing. **VIDEO SCENE**, a Toronto-based magazine also distributed in the U.S., is being produced largely with PCs using Ventura Publisher. And the computer press is not to be left out — the staff at **COMPUTING CANADA** recently began producing sections of the bi-weekly tabloid using Ventura Publisher.

New Retail Store Concept: Savvy

SAN FRANCISCO (NB) — What do you do if you're one of 12 computer stores in 8 square blocks and the competition is just too fierce? You do something completely different. That's what

the people who run Computer Attic, a San Francisco computer store, have done with Savvy, slated to open this month in downtown San Francisco's financial district. Savvy will specialize in highlighting the cutting edge of desktop graphics and computer-aided design technology, including an online design studio, slidemaking, color printing, prepress, multimedia presentation, animation, and video. Customers can see combinations of micros, software and peripherals working in conjunction and talk to experts in the graphic arts regarding putting together a system for their needs. While the Macintosh will take center stage, AST Research's IBM-compatibles are to be sold at the new-type retail store as well. "This is a completely original concept," Savvy's Apple account manager Brad Walonick told NEWSBYTES. "The idea is to get away from just selling hardware to showing what machines can really do." The market for computer aided design gear is just heating up and Savvy hopes to carve out a niche in the market. Walonick says a major design firm in San Francisco expects to save US\$1 million a year in typesetting costs by buying two Macintosh IIs, for instance.

DATA STORAGE

Disk Storage Breakthrough

SANTA CLARA, Ca. (NB) — Imagine one 3 1/2" diskette holding the equivalent of a 20 megabyte hard disk drive. It's not the stuff of fantasy, but of reality, as Insite Peripherals has created a drive that can store that much data on the small-sized floppy. Such a high-capacity floppy could make data back-up, now a lengthy process involving many diskettes, a simpler process. The technology involves modification of the diskette to accommodate a special stripe of optically and magnetically recorded data.

Unlike many new disk drive technologies, this one seems destined to make it to dealer shelves. The teams of Kodak and Verbatim, and Xidex and Dysan, have licensed to produce the high capacity diskettes. Insite expects the first disks should be available by the first quarter of next year.

Somewhere In The South Pacific

WILMINGTON, De — Kao is preparing to substantially increase its U. S. production of 3.5-inch floppy diskettes. The company has just purchased the assets of Sentinel Technologies, a U. S. producer of floppies, and forty acres in Plymouth, MA. The forty acres will be the site of an additional three-million-diskette-per-month facility. What are they going to do with all of those little diskettes? They're going to stuff them into kangaroos. Well, diskaroos actually. They're like kangaroos but have more pockets and are filled with little Kaos instead of joeys. The new soft diskette cases, which contain diskettes in assorted colors, are similar to the nylon cases sold by Ricks and Traveling Software. The case is included at no extra cost with the purchase of ten little Kaos. (Shouldn't something full of little Kaos be made from calf skin?) Kao is already producing in Canada and, according to Kao spokesperson Bud Barclay, "With the additional capacity, Kao will be the largest producer of 3.5-inch diskettes in north America." He also assured me, "By the end of next year the dollar value of the 3.5-inch market will exceed the 5.25-inch—no doubt about it." If you haven't yet made a commitment to the diminutive, it probably won't be long before you do. Contact Kao at (800) 443-0100 x-947 to find your nearest dealer.

GENERAL INTEREST

Computers Flunk FCC Tests

SAN FRANCISCO (NB) — The Federal Communication Commission has told The SAN FRANCISCO CHRONICLE that 75% of the PCs it's recently tested failed radio interference standards. The report says clones from Asia are the most flagrant violators.

The FCC officials quoted say companies are submitting "laboratory queens" or prototype machines to the FCC for approval, then failing to manufacture the systems that have passed emission standards. One testing house says some 150 off-the-shelf computers were recently examined before one was found to be in compliance. Such big name companies as Hewlett Packard, IBM, and Mitsubishi were found among the violators, Merle Coe, president of HAAR Industries, told the newspaper.

The violators get fines of US\$2,000 but often continue to flaunt the law, says the report. That's because the FCC approval process is lengthy and the competition in the computer marketplace is fierce. "The problem is the off-shore guys," re-

ported one testing official.

Electronics Employment Up

SANTA CLARA, Ca. (NB) — More U.S. workers are employed in electronics than ever before in the nation's history, reports the American Electronics Association. In the trade group's latest survey, 2.61 million Americans are employed in electronics in June, compared to 2.49 million one year earlier. In computer companies specifically, there were 459,700 employed compared to 430,800 in June, 1987.

"This steady upward curve is an indicator of healthy growth and we expect more of the same throughout 1988 and into the next year," remarked Pat Hill Hubbard, the AEA vice president.

The biggest gains were in software programming, where 34,400 jobs were added compared to last year, bringing the total number of workers in this field to 280,400, an increase of 16 percent.

GM Speaks With Forked Tongue

WASHINGTON (NB) — Transportation Secretary James Burnley says General Motors Chairman Roger Smith told him GM's Hughes Aircraft Corp. would not protest the awarding of a US\$3.6 billion air traffic control computer contract to IBM. Just days later, says Burnley, "the protest came in." Burnley said Smith telephoned him shortly after the giant contract, the largest in IBM's history, was announced. Smith said Hughes wouldn't appeal, according to Burnley, and that Hughes would turn over its data to IBM. Then Hughes complained to the General Services Administration's Board of Contract Appeals. The contract is on hold while GSA ponders the matter. The contract is a key to IBM's plans for its RT reduced instruction set workstation, which will be the basic terminal in the system.

\$3.6 Billion Contract On Hold

WASHINGTON (NB) — The General Services Administration's Board of Contract Appeals has put the US\$3.6 billion contract awarded by the Federal Aviation Administration to International Business Machines Corp. on ice pending an appeal by Hughes Aircraft division of General Motors Corp. Hughes charges that the award violated federal procurement regulations. Hughes was the unsuccessful bidder in the four-year contest to win a contract to modernize the FAA's air traffic control system.

In its protest, Hughes complains that IBM undercut its bid because Uncle Sam allowed IBM to bid used computers, while Hughes had to bid new gear. IBM says the charges are baseless. The contract is important to both companies. Hughes had set up an entire corporate division to bid on the project and may have to lay off 250 workers. For IBM, the contract is a key in the company's strategy for the RT engineering workstation, which will be the backbone of the FAA system. IBM has said it expects the new air traffic control system will use 12,000 to 15,000 of the slow-selling reduced instruction set computers.

18% of US Households Have PCs

A Gallup poll done for the ELECTRONIC INDUSTRIES ASSOCIATION in Washington estimates that 18 percent of American households now own personal computers. Households with children are more likely to have computers than single-person households.

16.4% Growth In PC Sales

TORONTO (NB) — The personal computer market in Canada grew 16.4 per cent in 1987, according to International Data Corp. Canada. That made it the fastest-growing part of Canada's information technology industry. IDC Canada says the PC market grew to C\$1,536 million in 1987. The over-all information technology industry grew 8.5 per cent to C\$12,443 million.

IDC's report lists six major "industry stories" of 1987. It was a slow year for mainframes. IBM continued to have problems in mainframes and mid-range systems. IBM's 9370 got off to a slow start. Digital Equipment, Tandem, Stratus, Apple and Compaq enjoyed a good year, IDC said, but at the same time the research firm points to increased pressure on traditional minicomputer vendors, a category that presumably includes Digital. The final point is renewed enthusiasm for Unix.

IDC says these developments reflect fundamental, longer-term forces, particularly a shift toward standardized systems, consolidation to a few key hardware and software architectures, and smaller systems continuing to drive the industry's growth.

Bach's Music Done On AI System

BRUSSELS, BELGIUM (NB) — An IBM researcher is being aided by Bach's music to create an expert system which is designed to listen and

examine music. Music found to be out of harmony, or out of tune, even though the changes may be very small, will be corrected automatically.

Kemal Ebcioglu developed CHORAL, the program responsible for the music analysis. Being a master of music and a holder of an Informatics degree, he used the Backtracking Specification Language, which performs fast logic analysis using a computer.

Bach's music, which was written in the 18th century, is mainly composed of musical harmonies. Each one of these is designed to be performed by a male and female choral group with the soprano as the major sound heard. CHORAL, which is composed of 350 rules of deduction, each one of which is subdivisible into many more rules, corresponds to the way our voice track actually works.

Although such a job may seem simple, it takes an IBM mainframe about 30 minutes to run the program and perform an analysis on sounds. It executes 23 billion instructions.

Kemal Ebcioglu stated, "CHORAL is a test to see whether the artificial intelligence software available today is capable to analyze sounds, which are among the most difficult analog signals to be examined by computers. The success of CHORAL, however, affirms my position that computers, and especially software, are finally able to tackle extremely complex projects."

PC Screens: Bad For Your Eyes

BERKELEY, Ca. (NB) — The director of the U.S.'s first clinic dedicated to the study and treatment of vision problems related to video display technology says regular VDT exposure may cause eye focusing problems. James Sheedy of the University of California's School of Optometry VDT Eye Clinic says his study of 153 patients revealed more of them to have problems focusing their eyes than "we would normally see in a clinical population." In addition to problems focusing, the patients also suffer from eye fatigue and other vision problems, he said. Most of the patients were under 40 years old, twice as many were women as men, and all worked for an average of 6 hours a day for more than four years at a VDT.

Sheedy suggests work at a VDT could be "changing the physiology of the eye," in his report. He suspects the problems are due to several factors: the glowing CRTs, the posture of the workers, and the use of prescription glasses, specifically bifocals, in many of the cases. He acknowledges that the report is preliminary and not strictly scientific.

American Electronics Association, Santa Clara, Ca., says sales of U.S.-made electronics goods are booming. The latest figures show record sales of electronics goods both in the U.S. and abroad, amounting to US\$137.5 billion for the first six months of this year.

Software Sales Booming

WASHINGTON (NB) — Who says the personal computer market is soft? According to the Software Publishers Association, sales of personal computer software boomed ahead 51 percent in the first half of 1988, on sales of US\$1.8 billion, compared to US\$1.2 billion for the first half of last year. "People have alleged that the PC software industry is maturing," said the SPA executive director, "but this data, which surprised me, shows that it's nowhere near maturing." According to SPA, US\$1.39 billion of the sales was for MS-DOS software, compared to US\$192 million for Apple Macintosh software. But the Mac represented the fastest growing segment of the market, with sales an astonishing 131 percent ahead of last year.

The End to Ferris Bueller's Day Off?

UNISYS CORP., Blue Bell, Pa., is offering microCASTS Attendance, designed to help school administrators keep attendance records and notify parents of absences through an auto-dialer. The product will be available in early 1989 and will be priced between US\$1,800 and US\$3,000.

JAPAN

Toshiba's Real-Time Telephone Translation of English/Japanese

TOKYO (NB) — Toshiba has developed the world's first Japanese-English automatic character translation phone, taking advantage of AI and satellite communications technology. The phone translates conversations from Japanese to English and vice versa when the chats originate via keyboard.

For instance, Japanese sentences written in Tokyo are translated in real-time into English by an engineering workstation, and the translated sentences are displayed on the screen in London through satellite communications. In the same

RESOLUTIONS

Enterprises

Desktop Publishing Consulting Services to Business

❖ Production

Complete high-quality production from concept to completion using the best tool for each job at hand

❖ Training (PC or Mac)

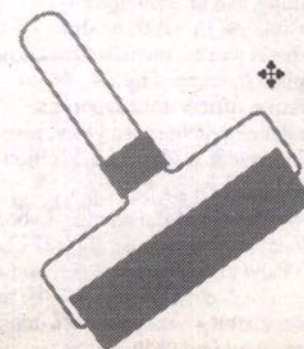
Personalised Corporate Training Programs
Page Layout—Ventura, PageMaker, ReadySetGo!
Graphics Packages—FreeHand, Illustrator, Designer

❖ Systems Consulting

System recommendations, System set-up, Telephone Support and more...

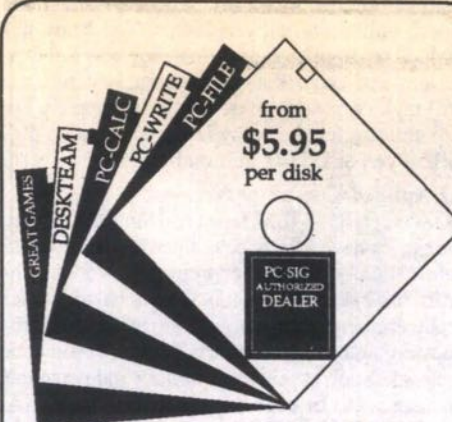
❖ Sales

ONE source for DTP Accessories:
Fonts, Utilities, Graphic Design Software, etc.



683-1599

500 - 1190 Melville Street, Vancouver, B.C. V6E 3W1



THE INEXPENSIVE CHOICE FOR QUALITY SOFTWARE

- 10,000 PLUS PROGRAMS
- 1200 PLUS DISKETTES
- 400 PLUS PAGE DIRECTORY

SIM-COM SERVICES

Computers - Software - Accessories
Custom Programming

14150-101 Ave
Surrey, B.C. V3T 4Y2
585-2326

PC-SIG Authorized Dealer

XEROX

SERVICE CENTRE

Okidata

Laser Printer Supplies

Drum Kits ----- \$299.00

Toner Cartridges -- \$39.99

Also OKIDATA Printer Products

Hard Drives

Special Installation Price

20 MB \$449

30 MB \$499

40 MB \$649

Sale on 20 MB Hard Cards

936 W. 8th Ave.
Vancouver BC
736-8931

Computer Learning By VIDEO PROFESSOR™

COMPUTER LEARNING IS NOW AS EASY AS WATCHING T.V. — WE GUARANTEE IT!

Are you frustrated trying to learn your computer programs from complicated manuals? Don't waste any more time with the manual or long weeks in a classroom. The Video Professor tapes are a quick and easy software learning system designed to teach you step-by-step at your own pace and in the privacy of your own home or office. These video tapes are accurate, entertaining and very professionally done. They are available at a number of levels from beginner to expert. And best of all they are very affordable.

APPLE
Appleworks
Word Processing
Spreadsheets
Databases

IBM
Lotus 123
WordPerfect
dBase III+
MS Word
Wordstar
DOS
Pagemaker
Ventura now available!

Remember...
I have a
solution for
everyone!



A GREAT WAY TO LEARN!

For more information call:
Masako Holdings Ltd

4811 Mahood Drive, Richmond

(604) 275-1565



Dealer Inquiries Welcome.

Laser's Edge Your Desktop Publishing Centre

Specialists in
high resolution
output for
Desktop Publishers.

Linotyping
LaserPrinting



Macintosh™ and
IBM™ supported

Hardware & software
sales and consulting

G.T. Laser's Edge Ltd.
750 West Pender Street, Suite 804,
Vancouver B.C. V6C 2T8

Phone 662 3774

way, the process goes from London to Tokyo. Japanese sentences appear on the upper part of the screen and Japanese-translated replies appear on the lower part, so you can make a conversation by comparing the sentences. Toshiba calls it, "Global-scale simultaneous interpretation."

The translating procedure is being hailed as speedy and precise, able to grasp even vague meaning.

MITI Readies Next Generation

TOKYO (NB) — The Ministry of International Trade and Industries (MITI) will launch a major new research and development project in the area of next-generation computers next year. MITI has announced it has the cooperation of major computer makers such as NEC and Fujitsu, and the Electrotechnical Laboratory. Actual development of the next-generation machines is expected to begin within a few years.

The study covers three areas: a neurocomputer which imitates the human brain, a biocomputer made from biological materials, and an optical computer capable of ultra high-speed data processing using optical signals.

The neurocomputer and biocomputer have several features MITI will develop, including parallel processing of information and self-learning. MITI claims that the recent developments in physiology, biology, and information engineering have made possible an in-depth analysis of the way the human brain works, and that such knowledge can be applied to computing.

MITI's executive officer told reporters, "We want to achieve development in ten years, investing 40 - 50 billion yen or US\$ 0.3 - 0.5 billion."

Fuzzy Computer Lab To Be Set Up

TOKYO (NB) — Details of the coming Laboratory of International Fuzzy Engineering (LIFE), to be set up by MITI and major Japanese companies, are finally being revealed. MITI says the lab will spend eight years, starting next year, researching the so-called fuzzy logic and applying the research to the creation of special-purpose computers. MITI will also receive the participation of colleges and national research institutes. 44 companies are participating in the project, including NEC, Toyota, Kawasaki Steel, and foreign capital firms.

In the world of fuzzy computers, vague terms such as "almost," "old" or "probably" are understood, unlike current computers. The study will include the application of fuzzy logic to a control system and other data processing systems, and will make a prototype of a fuzzy computer. The expenditure for the study is expected to be 5.47 billion yen or US\$41 million by 1995.

AI-Applied Computer Network

TOKYO (NB) — IBM Japan and Sumitomo Metal Industries have jointly developed a system which automatically operates computer networks using artificial intelligence (AI). The system, which replaces many functions previously performed by humans, automatically starts various application programs such as power-switching and personnel management. In case of system failure, the AI application infers the cause and prints out the result on a printer.

The system includes a mainframe, peripheral units, and terminals, and interactively connects computers from each facility by an online system. Even if one computer is down, the system can prevent other computers from shutting down. The system is currently being tested and is scheduled to start factory floor operation this November.

TV Phone Via ISDN

Japan's telecom king NTT is planning to release a black & white 64K bps still-picture TV phone using ISDN technology. The price per unit promises to be 70,000 yen or US\$530. The shipping date and more details have not been announced.

LOCAL AREA NETWORKS

Newbridge NetView Compatibility

KANATA, Ont. (NB) — Newbridge Networks Corp. has announced its 4600 MainStreet Network Management Systems are now compatible with IBM's NetView corporate network management software.

The 4600 MainStreet products manage and control digital backbone networks of Newbridge multiplexers and high-speed digital transmission facilities. Compatibility means Newbridge networks can now be managed through the NetView operator interface.

Gandalf, Novell Sign Agreement

OTTAWA (NB) — Gandalf Technologies Inc. has signed an agreement with Novell Inc. of Provo,

Utah, under which Novell will supply customized versions of its NetWare local-area network operating software for Gandalf's StarMaster network processor. Gandalf says NetWare 2.1 will be integrated into the StarPort subsystem of the StarMaster to deliver MS-DOS applications processing and LAN functionality to asynchronous terminals, IBM display stations and personal computers. Gandalf's StarMaster system links otherwise-incompatible proprietary networks and workstations at 64Kbps. NetWare will provide fault-tolerant file serving, centralized system management, advanced security screening and resource usage accounting, Gandalf says, and will let the StarMaster processor serve as a LAN gateway and bridge for PC users to share files and other network resources.

MACINTOSH

"Look and Feel" Trial Delayed

CUPERTINO, Ca. (NB) — US District Judge Robert Aguilar has announced that the first phase — the licensing agreement dispute — of the trial of Apple Computer vs. Microsoft and Hewlett Packard over visual copyright will not begin until August 14, 1989. Aguilar gave no explanation for the lengthy delay, prompting Microsoft to immediately ask for one. It's generally acknowledged that the longer the dispute goes on, the more it will hurt Microsoft and Hewlett Packard, whose Windows 2.03 and NewWave operating environment are being challenged. If the licensing dispute just starts in a year, then the copyright dispute could stretch out to years later.

Meanwhile, Apple is asking for Judge Aguilar to remove himself from the case, citing conflict of interest because Aguilar's son works at Hewlett Packard. Aguilar has already declined to step down from another suit for the same reason, but must consider it again. The hearing on this matter is slated for September 9.

COMPUTER ASSOCIATES, San Jose, Ca., is working on its first Macintosh product, according to COMPUTER RESELLER NEWS. The world's largest software company has been one of the lone hold-outs in support of the Macintosh, favoring to stick with MS-DOS, VAX and other machines for its accounting packages.

Micro Marketing International of Williamsport, Pa., has purchased ICON REVIEW, the mail order firm based in Carmel, Ca. The purchase price was reportedly US\$650,000. The new company will be called CMO Icon Review. New catalogs are slated to be mailed out next month.

Digital's and Apple's Plans

CUPERTINO, Ca. (NB) — With its distinctive ease of use, and "look and feel" a thing of the past once Presentation Manager for IBMs and compatibles comes along, Apple's next frontier is the mastery of connections to other, diverse kinds of computer systems, a must if the Macintosh line is to become a staple of international business. Apple's progress in this area was evident at MACWORLD (see special reports), but also in an announcement with Massachusetts-based Digital Equipment. Apple Computer and Digital Equipment have finally unveiled their long-awaited plan to further integrate the Macintosh and the Digital VAX VMS computer systems. Presented at a conference by over 30 engineers from both companies, the plan outlines a joint framework with which Macintoshes and their AppleTalk network are integrated with VAX systems and DECnet/OS enterprise networks. Developers at the conference, held in Boston, will now be able to integrate the two kinds of computer systems based on international standards.

The development program includes: wide-area routing for AppleTalk for VMS, via DECnet tunneling and AppleTalk/DECnet gateway functionality; a VAX-based AppleTalk Filing Protocol-compliant file server; print services so that both kinds of machines can access PostScript printers; network management functionality from both AppleTalk and DECnet networks. Terminal access and X-Windows support on the Mac; support for SQL and CL/1 database access; support by Apple for Digital's Document Interchange Format document content standards for document interchange between Macintosh and VMS systems.

Apple and DEC expects to have end-user products and developer toolkits in a year. The companies also announced that Digital's field service organization will service Macs in selected locations.

The conference came amid rumors that Digital is about to make another go at the personal computer market, where the company has repeatedly

crashed on the shoals of compatibility. These rumors say DEC will unveil a personal computer based on the MicroVAX that will run MS-DOS, Digital's own VMS operating system, and even, perhaps, OS/2. No comment from DEC.

Top 200 U.S. Mac Installations

SAN FRANCISCO (NB) — The largest installed base of Macintoshes in the world is at the University of Michigan at Ann Arbor where 6,000 Macs make up half of all computers on campus. So says MACWEEK which has just announced the results of a massive telephone survey involving 5,000 phone calls to nearly 900 Macintosh sites around the country. Although universities make up half of the 200 sites with the most Macs, the magazine reports that the Apple computer is "no longer a back-door phenomenon but an approved item on organizations' buy lists."

Among the top 10 are two corporations, E.I. du Pont de Nemours & Co., Aiken, South Carolina, with 3,000 Macintoshes among 8,000 total PCs, and Northern Telecom, Research Triangle Park, North Carolina, with 2,830 Macs among 9,000 total personal computers.

Perhaps the most significant find was at Electronic Data Systems in Southfield, MI where Macintoshes make up a whopping 92 percent of all PCs in use. There are 1,380 Macintosh computers, or one for nearly all of the facility's 1,500 workers.

Nasty News For Claris

MOUNTAIN VIEW, Ca. (NB) — As Claris attempted to make a big splash at MACWORLD with a new computer-aided design package, Apple Computer's software spin-off winced through some unfavorable publicity in BUSINESS WEEK. In an article titled "Apple's Software Branch May Be Headed for a Fall," BUSINESS WEEK writer Richard Brandt points to the company's bloated budget and staff (210 employees and 85 programmers), and its significant failure to get a new, original product out the door in its first 15 months. Interestingly enough, most of Claris' revenues still come from AppleWorks, a program for the Apple II.

The magazine reports Apple will probably have a public stock offering for Claris within the next year that will reduce its 82% stake in the company and "push Claris into the cruel, competitive world." In all fairness, Claris' first original — well, sort of — product has hit the streets — Claris CAD (see MACWORLD report). It was actually a joint effort of Claris programmers and C.A.S.E., a Cincinnati-based company which created Geodraw, a CAD workstation application. All Claris' other offerings have either been updates of Apple programs or acquired through mergers with or purchases from other companies.

General Computer, Waltham, MA., has officially changed its name to GCC TECHNOLOGIES. The reason is confusion — several other companies are named General Computer. GCC makes Macintosh peripherals including laser printers and storage devices.

Apple Canada, Markham, Ont., announced that a four-megabyte configuration of the Macintosh II computer will cost C\$11,950, and a four-megabyte memory expansion kit will be available in Canada for C\$3,950. Apple Canada also announced the Apple Scanner with a Canadian retail price of C\$2,795.

Claris Canada, Toronto, has announced that Claris CAD will be available in Canada in the fourth quarter of 1988 for C\$1,199. IGES and DXF translators will cost C\$449 for the pair, and MacDraw II owners can upgrade to Claris CAD for C\$599.

Another Mac Laptop Revealed

SAN JOSE, CALIFORNIA (NB) — Apple's plans for the high-end Laguna Laptop are pretty well known, but how about a budget laptop called Guinness? Tim Bjarin, head of Creative Strategies International, a consultancy firm based in San Jose, appears to have some inside information on what's happening at Apple. Writing in MICROSCOPE, a UK computer trade weekly, Bjarin reveals that the Guinness is a battery-powered Mac laptop which will price in at well under the US\$4,500 Laguna laptop. Bjarin doesn't say what the Guinness will feature, but NEWSBYTES UK'S sources suggest it has a single-floppy drive, an LCD screen, 1Mb of system RAM and cursor control in place of the mouse. Bjarin also reveals that Apple has two 68030-based machines in the pipeline — Bones and Modern Victoria. Bones is a 16MHz tower beast, whilst Modern Victoria rips along at 20MHz. Networking is an optional extra on both machines, using a system called 4-Square. Other features of Bones and Modern Victoria are

said to be Puff, a new sound and video board, and Super Scooper, a disk drive capable of reading and writing in both IBM and Mac formats. When will see the new machines? Bjarin reckons it'll be early in '89 with a possible showing for one of the 68030 boxes at the Boston MacWorld Expo later this month. NEWSBYTES UK's sources, however, suggest an announcement for the week of Comdex (Las Vegas - 14/18 November). With Atari expected to unveil its Stacy ST laptop that week, it looks like there could be a lot of laptop interest around...

NEXT COMPUTERS

All I Got Was A Crummy T-Shirt

PALO ALTO, Ca. (NB) — We hear that in lieu of computers, Apple founder Steve Jobs has arranged for T-shirts to be sent to some 900 of his favorite software developers. Emblazoned with the logo of his company NeXT, they're accompanied by a note asking his friends to be patient, the computers are coming. "It will be worth the wait, I promise you." Obviously Steve has had these T-shirts hanging around for some time. NEWSBYTES got hold of one through illicit channels way back in 1986! We can testify to the fact that the color has held up through two years of laundering, in case you had any doubts about the quality of the workmanship.

PC NEWS

Wang Finally Serious About PCs?

LOWELL, Mass. (NB) — Wang Laboratories has hired Graham Beachum to a new position of vice president of personal computer sales and marketing. Wang stole Beachum away from Dell Computer Corp., where he was vice president of marketing and sales. Frederick Wang, president and chief operating officer at Wang, said the move "underscores the seriousness of our intent to capture a significant share" of the PC market. Wang established its personal computer division in May. Beachum, 40, has had senior marketing jobs at Tandy and IBM.

AT&T Cuts 80386 Prices

MORRISTOWN, N.J. (NB) — AT&T has moved to position its high-end personal computers to compete with the machines based on the new Intel 80386SX chip. The 80386SX is a somewhat disabled version of the 80386 that is a little bit slower but a lot cheaper. "This reduction shows customers and the industry that AT&T intends to be an aggressive player in the personal computer field," says Francisco Albuquerque of AT&T's personal computer division. Prices on the flagship 6386 WGS, which runs at 16 MHz, have been slashed by more than 20 percent. The basic model has been knocked down from \$US4,899 to \$US3,495.

Lotus Development Corp.

, Cambridge, Mass., has named Mark Flanagan as president of the Lotus Development Corp. subsidiary. Established in 1984, Lotus Publishing develops and markets information products and services.

First 486 Systems Due In 1990

BRUSSELS, BELGIUM (NB) — NEWSBYTES EUROPE has learned that 80486 samples have been delivered to IBM, COMPAQ and DELL which are expected to announce new '486 systems for delivery in 1990.

The chip, which has been covered previously in NEWSBYTES, offers '386 compatibility and faster speeds due to its denser manufacture.

One source close to Intel said to NEWSBYTES EUROPE that these systems will have ESDI hard disk controllers running at 15MHz (against 5MHz for MFM and 10MHz for today's ESDI) and thus will be able to use 760MB hard disks. Prices are naturally high and these supersystems should cost about US\$30,000 and offer about 10 - 15 MIPS.

What The 80486 Will Be Like

SANTA CLARA, Ca. (NB) — The successor to the 80386 chip, the 80486 from Intel, will be so fast and so powerful that it may start a new class of computers, so says Intel. Slated to ship in sample quantities within a few months, the RISC-like 80486 is expected to propel the PC into the workstation and minicomputer market, according to one analyst. It will be backward-compatible with the 80386 and its predecessors, able to run IBM software, but will also take advantages of new applications that require speed and power. Sources say the first computers with the 80486 should start to appear around 1989 and 1990 and will most likely make use of the 80486 for its ability to direct

multiple tasks and be a local area network server. Speeds should range from 25 megahertz to 40 MHz but along with the speed comes a high price. Look for the 80486 machines to run up to US\$40,000 each. Meanwhile, look for a 33 MHz 80386 to be announced soon, we're told.

IBM DOS 4.0 Released

FRANKFURT, GERMANY (NB) — As reported by NEWSBYTES EUROPE in February, the new DOS 3.4/4.0 released by Microsoft includes LIM/EMS support, higher capacity storage (more than 32MB - however the clusters get bigger, so more space is wasted for small files), menu-oriented installation a la OS/2, and new commands, including a memory manager. In addition, a file caching capability is included which makes this reporter wonder whether it will work with MS Windows (most of the other caching programs don't).

IBM Copy Protects New DOS 4.0

WHITE PLAINS, NY (NB) — IBM has quietly introduced a mild form of copy protection with the shipment of DOS 4.0. To my knowledge, it is a first for Blue. Operating systems, language products, Display Write and other IBM software have never been protected in the past even at a time when all of the major PC software vendors protected their products. Now that the major players have foregone the odious practice, the bootlegger's most cooperative victim has seemingly decided to turn everything around.

So many problems have been noticed by early reviewers of the product that the point has gone all but unnoticed. However, the new DOS can't be copied to a hard disk or to other than the original media type. If it is, the installation process required to create the new DOS shell, the product's major innovation, will fail to work from the new media.

The copy protection employs a hidden directory entry and other strategies that allow the user to use the DISKCOPY command to reproduce backups but not to copy the installation files to a different media format with COPY or XCOPY. Furthermore, at least some earlier versions of DOS will not DISKCOPY the new format. And, users with compatible machines may find that their system will not start from the installation diskette in any case.

Quitters At Lotus, 1-2-3 Delays

CAMBRIDGE, Mass. (NB) — Irfan Salim, vice president and general manager of Lotus Development Corp.'s spreadsheet division, the most important in the company, has resigned, citing personal reasons. Lotus spokesman James O'Donnell says Salim's resignation will have no effect on the oft-postponed release of Version 3.0 of 1-2-3. O'Donnell says the upgraded spreadsheet is still scheduled to see the light of day in the fourth quarter.

Salim is the fifth vice president to flee Lotusland since March, when Lotus's aggressive Chairman Jim Manzi forced out Senior Vice President Charles Digate, expected to be Manzi's successor. Digate had hired Salim to run international operations. He came to the U.S. from Britain in November to take over spreadsheet marketing.

Meanwhile, Lotus' marketing manager for Agenda, Conall Ryan, has also resigned to join Steve Jobs' NeXT, Inc. in Palo Alto, Ca. Reports say he feels his job is done at Lotus and is ready for a new challenge. "Agenda's launch is out there and it's happening," he told the SAN FRANCISCO CHRONICLE. "The opportunity to be involved with NeXT is too good to be true."

IBM And Apple Tied For Dollar Share Of Sales
PLYMOUTH MEETING, Pa. (NB) — Apple and IBM are tied for dollar share in computer store channels, according to the latest IMS America National Computer Retail Reports. According to IMS, it's the first time IBM's market share has fallen below 20 percent, and that Apple matched or topped IBM in a non-Christmas selling period — further evidence that Apple is making it in the crucial business market. Apple actually squeaked by IBM in total dollars for the quarter ending April 1988 by half a point, according to IMS.

QUOTES

Quote Of The Month

"Putting Presentation Manager on an IBM is like putting Bernaise on a hot dog." — Alan Kay, Apple fellow, at MACWORLD EXPO

The Tricks Of The Trade

SANTA MONICA, Ca (NB) — A loquacious

VEPA and
DESIGN VANCOUVER
Presents:

A Competition and
Exhibition of the
Best of Vancouver's
Electronic Publishing.

THE COLOUR OF
BLACK

OCTOBER 21 TO 28
WORLD TRADE CENTER

Quark

ADOBE
SYSTEMS INCORPORATED

Graphic
Design
Software
Extracut

VANCOUVER
DESIGNERS
ASSOCIATION

Competition Deadline:
September 30, 1988

Pick-up Call for Entries at:
-Computer Dealers
-Typesetting Service Bureaus
-Or phone: 224-6152

CALCON
COMPUTER PRODUCTS

Super Font Cartridge

23 FONT CARTRIDGES IN 1!

Works on all 100-per-cent HP-compatible LaserJet printers

For only about what you'd pay for two ordinary cartridges you can have all of the enhanced capabilities of the Super Cartridge. By itself it contains essentially all the normal portrait-mode fonts available in all the other standard font cartridges combined.

More than double the fonts and symbol sets possible with just soft or downloadable fonts in your printer.

Total compatibility with existing font cartridges. Just tell your software that you have multiple font cartridges, and you're all set!

Fastest total printing time — no need to wait for fonts to load. Even faster than printers that must generate fonts for each use.

55 fonts — each individually hand-crafted — plus multiple symbol sets (for even more font capability), all in 10 different typefaces.

Easy to use: All the commonly needed fonts are always there. No need to coordinate font or cartridges.

Character sizes from 4 to 16 point. The largest range anywhere, plus plus extensive special character support with drawing, legal and math symbols, etc.

ALL 55 FONTS

ONLY

\$799

After
Oct. 1 \$899

TONER CARTRIDGE RELOADS

HP II \$79⁹⁵



NEW — \$169

canon®



LASER

Your Choice



PC COPIER

\$69⁹⁵

LASER NEW — \$159

875-0977



TRI TECH COMPUTERS

BACK TO
SCHOOL
Specials

XT TURBO

Features:

- IBM Compatibility
- 1 360 K Floppy Drive
- Serial Port
- Mono Graphics
- MS DOS/GW Basic
- High Resolution TTL Monitor
- 640 K Ram On Board
- Parallel Printer Port
- Clock/Calendar

ONLY \$995⁰⁰

Genius Mouse package

Dr. Halo Paint \$99

Roland 1012 Printer

Including cable \$275

EGA Monitor & Card

(We take trades) \$750

Godspeed (3 sec)

Bible search \$129

Word Perfect 5.0 375

Disk Drive Cleaner

FREE With This Ad

8823 - 120th Street
Delta, B.C.

597-4777



Take it to the limit.

NEC C&C
Computers and Communications

NET
Local Area Network

VideoShow

Graphic Presentation Systems

FOR
SALES • SERVICE • SUPPLIES

CALL
683-5225

Network InfoSystems Inc.

607 - 535 W. Georgia Street, Vancouver, B.C. V6B 1Z6



source has revealed that Quarterdeck Office Systems and others, Microsoft was also named, have a secret IBM microcomputer for testing development projects. Officially, company spokespersons declined to admit to the existence of the mystery machine but my guess would have to be that it's the new IBM laptop computer. If you know anything of these machines why not give me a call. I'd like to hear about it here first. QUOTE OF THE WEEK . . . If you'd like to hear a hilarious story about the investigative methods of the fourth estate, give Quarterdeck a call and talk to Gary Saxer. When I asked Gary about the foregoing laptop rumor, he denied it completely. But I was fairly sure of my source. So, I asked him if the machine uses a '286 or '386 processor.

He told me instead about an apocryphal internal memo warning the Deckers about the methods employed by investigative reporters. It seems that, according to the memo, reporters will call Quarterdeck and ask if they're still roasting babies at the Santa Monica deckquarters. When confronted with denials, the correspondent then says all he really wants to know is the type of barbecue sauce being used. Gary had me on the floor.

OS/2-PS/2

Tandy, Dell Delay PS/2 Clones

FORT WORTH, TX (NB) — Tandy became the third PS/2 clonemaker to delay shipping its computers, following announcements by Acer of Taiwan (which held up its entry into Japan) and Dell Computer. All three blamed "chip problems generally." This comes on the heels of a NEWSBYTES EAST report that Apple has caught up to IBM in the share of PCs sold at retail stores.

Boca Research, Boca Roton, Fl., however, says the IBM PS/2 market is booming, despite appearances. It says its PS/2 Micro Channel boards have exceeded sales expectations "200%" (from what, they don't say) with two Scandinavian distributors placing orders on its serial and serial-parallel cards while they were still prototypes.

The Classic Coke Gambit: IBM AT To Return?

ARMONK, N.Y. (NB) — Listen for the jungle drums. Scan the sky for smoke signals. The IBM rumor mill is grinding again, with the word from the Big Blueologists that the PC-AT is about to come to life again. It's the Coke Classic gambit — brought back by customer demand. "PC Week" says the new machine will be called the PS/2 Model 35. "The Wall Street Journal" says the new machine will abandon the controversial Micro Channel Architecture in favor of the good old AT bus. Stewart Alsop, editor of "P.C. Week," is skeptical. "It would kind of give the lie to everything they've been saying," he told the Associated Press. IBM, characteristically, is mum. Remember, dear readers, IBM has the power to cloud men's minds. Only the Big Blue Shadow knows for sure.

In other IBM news, the company has rolled out a comprehensive line of expert systems software, for users of IBM products ranging from novices to artificial intelligence mavens. The software guides the user through a series of questions in order to extract the lists and rules needed in the software. The software is available for a full range of computers from PCs to mainframes. The products include a new version of the Expert System Environment, aimed for users with few computer skills, a complementary program called Expert System Consultation Environment-PC, and an update of KnowledgeTool, aimed at computer pros. For AI gurus, IBM is offering IBM KEE, developed with Intellicorp. Inc. of Mountain View, Calif.

IBM Ships 25 MHz Model 70 PS/2

NEW YORK (NB) — Selected user and dealers, among them "InfoWorld," have been receiving IBM's entry in the 80386 speed contest. IBM has confirmed it is shipping a few of the 25 megahertz PS/2 Model 70-A21. The machine is supposed to be in dealers hands in quantity by end of September. The machine is aimed squarely at the Compaq 25-MHz machine. According to "InfoWorld," preliminary benchmark tests rate the IBM at 6.97 in processor speed versus 6.15 for the Compaq. But the Compaq beat the Model 70 handily in hard disk benchmarks.

TELECOMMUNICATIONS

& FAX

New Communications Interface

ALPHARETTA, GA (NB) — Digital Communi-

cations Associates Inc. of Alpharetta turned out to be the brains behind the new communications interface put into the public domain by Intel on August 16. The Communicating Applications Specification is on a new Connection CoProcessor board which can communicate with mainframes, share that information with PCs or fax machines, and do it all in the background. If all of this works as they claim it will for about US\$1,000 with a modem option priced at under US\$300 (available in September), it should be a unique product. But if this interface can really become a standard, you won't have to worry about modem, fax, or mainframe connections again. Lotus, Microsoft, and Borland all claim they're supporting it.

U.S. Spies On British Telecomm

NORTH YORKSHIRE (NB) — Investigative journalist Duncan Campbell has caused a stir in the latest NEW STATESMAN magazine by revealing that the US's National Security Agency (NSA) is to sink several tens of million dollars into expanding its Menwith Hill facility near Harrogate, North Yorkshire.

What does Menwith Hill do? Currently it listens to world radio transmissions. The expansion will take its operations into the world of international telecommunications. Campbell alleges that plans call for all international phone and data conversations, both in and out of the UK, to be monitored by the NSA site.

Can they do this? Yes. The UK Home Office grants 'monitoring warrants,' to prevent any embarrassing prosecutions under the Interception of Communications Act. Appearing on NEWSBYTES UK's local TV station, Campbell revealed that between 250 and 300 of these warrants are in use at any one time. Furthermore, between 6 and 12 of those warrants are what are known as blanket warrants. One warrant is sufficient to tap ALL international phone calls in and out of the UK.

What Uncle Sam does with all those phone call recordings, however, is anyone's guess...

Murata Business Systems, Dallas, announced a connection between its F-50 fax machine and most PCs. Called the Facsimile Interface Protocol (FIP), it lets users send images to and from PCs over a serial cable.

THE STOCK MARKET

Doomsayer Predicts New Crash

SAN FRANCISCO (NB) — Michael Murphy, author of the CALIFORNIA TECHNOLOGY STOCK LETTER, predicts a second Black Monday market crash REAL SOON NOW. And when Murphy talks, people listen. That's because Murphy successfully predicted the last Black Monday crash of October, 1987. He's been liquidating the newsletter's portfolio in preparation.

Perhaps it's also no coincidence that Computerland has just postponed its public offering. The Hayward, Ca.-based computer retail chain, citing adverse stock market trends, has announced its public offering will be postponed indefinitely. Ken Waters, Computerland president, says during the last few weeks, "the market declined almost 100 points and companies comparable to us declined by about 20 percent."

Computerland had hoped to raise US\$51 million by selling 2.7 million shares of common stock priced between US\$16 and US\$19 a share.

Electronic Rumour Mongers

ATLANTA (NB) — A "Wall Street Journal" feature about so-called "rumor wires," an adjunct of the market quotation systems on brokers' desks around the world, points up the quickly-dissipating line between fact and fiction in the online business world. Quote services like Knight-Ridder's MoneyCenter, McGraw-Hill's "S&P MarketScope," and even Dow Jones' own "Professional Investor Report" need to chase down and report rumors immediately, because to get scooped by 3 minutes can cost precious dollars on the market. At the same time, these services know that many of the reports they're rushing to press won't turn out to be true, and some will turn out to have been planted by traders eager to make hay on the resulting panic. The rumors, and panic, also scare away small investors, which is bad for business generally.

WHAT CAN BE DONE — Not a whole lot. But if anyone calculated, regularly, the percentage of rumors these services print which prove true later on, money could be made and customers served.

GEAC Back In The Black

MARKHAM, Ont. (NB) — Geac Computer Corp. has reported its first quarterly profit in two and a half years, with net income of C\$100,000 in the quarter ended April 30. That comes less than a year after the company emerged from receivership (for American readers, that's the Canadian equivalent of Chapter 11).

For the fiscal year, Geac reported a net loss of C\$2.1 million on revenues of C\$68.5 million — not wonderful, but better than last year's loss of C\$19.4 million on revenues of C\$64 million. Donald C. Webster, chairman, said in a press release that the company has "re-established its growth pattern," has increased its book value from C\$11.8 million to C\$37.5 million, and has a net cash position of C\$4.4 million.

Integra Systems., Vancouver, lost C\$1.26 million on revenue of C\$4.2 million in the year ended March 31, compared with a profit of C\$359,000 on revenues of C\$3.8 million last year.

Mitel Corp Kanata, Ont., lost C\$1.8 million in the 14 weeks ended July 1, on revenues of C\$101.6 million. In the 13 weeks ended June 26, 1987, Mitel lost C\$10.1 million on revenues of C\$92.7 million.

Oracle Corporation Toronto, reported revenues of C\$19.5 million for the fiscal year ended May 31, more than doubling 1987's figure of C\$8.5 million.

UNIX

Sun Establishes Ties With Fujitsu

MOUNTAIN VIEW, Ca. (NB) — In a dizzying rise to the top of the world's technical and engineering workstation market, Sun Microsystems has gained another major foothold in a deal with Japan's largest computer company, Fujitsu. Fujitsu will market six Sun workstations in a deal valued at some US\$280 million for Sun, which just recorded its first US\$1 billion revenue year. Currently Sun sells the most workstations in volume, but Hewlett Packard sells the most in dollars.

Unisys, Betting On Unix

BLUE BELL, Pa. (NB) — Unisys Corp. will acquire Convergent Inc., San Jose, Calif., for US\$350 million. The move provides further evidence of Unisys's strategic decision to focus on the Unix operating system as the software that will unify the Tower of Babel that characterizes the computer industry. "Convergent will become a cornerstone of our rapidly growing business in distributed systems based on open industry standards and state of the art networking technologies," said Unisys Chairman W. Michael Blumenthal.

Unisys had a close relationship with Convergent prior to the merger. Unisys has been reselling many Convergent computers, and manufacturing others under license from Convergent. Convergent also has important contracts to build Unix machines for resale by other companies, such as Groupe Bull and NCR Corp. Unix system have been Unisys's fastest-growing line of business. Sales of Unix systems tripled last year to US\$500 million, and are expected to hit US\$800 million this year.

Sun Microsystems, Mountain View, Ca., says net income was up 83% to US\$66.4 million, revenues doubled from US\$537 million to US\$1.05 billion in its last quarter compared to one year ago. The results were so good they surprised most analysts. Sun Microsystems was recently designated the fastest-growing electronics company in America.

IBM To Beef Up RT Workstations

NEW YORK (NB) — Arthur Goldberg, a key figure in IBM's RT reduced instruction set computer, says Big Blue will ship an RT workstation at least twice as powerful as the current offering within a year. Critics have trashed the RTs as woefully underpowered since the introduction of the machines in 1986. IBM has been unable to compete with Sun Microsystems, Apollo Computer, and Digital Equipment Corp. in the hot workstation market. But the "Wall Street Journal" notes, "It's not at all clear that IBM isn't just throwing good money after bad; the computer industry is brutal to products that get off to a slow start." Workstations are becoming so powerful and so inexpensive that they are becoming a key industry segment. International Data Corp., Framingham, Mass., reports that the workstation market has doubled every year since 1982. IDC says sales will continue to grow at 30 percent a year, becoming

ing a US\$9.4 billion market by 1992. In order to get a bigger piece of that market, IBM is spending as much money on development of RT hardware as it does on personal computers. Goldberg says IBM has put 160 people to work developing RT applications or getting outside software companies to port their applications to the RT.

IBM Announces New RT/PC Models

STUTTGART, WEST GERMANY (NB) — IBM, in an effort to dispel rumours about the demise of the RT/PC (or the 6150 as its called in Europe) introduced new models which are both powerful and faster than the predecessors. Model 6151/130 or 6150/135 and B35 have 16MB memory and a 114MB hard disk as standard. They also offer a 5.6 MIPS speed using an IBM-designed RISC processor, options for either a 310MB hard disk or up to 930MB hard disk storage. The systems support a maximum of 7.46GB and cost about US\$23000

USSR

Arms to Iran But No 386's For Soviets

SAN RAFAEL, Ca. (NB) — Soviet officials, on a shopping trip to Silicon Valley computer firms, have scored a big purchase from MicroPro International, which has agreed to help develop of Russian version of WordStar. The technology-hungry delegation is seeking software and hardware for the U.S.S.R., which by current reports has only about 200,000 microcomputers compared to 20 million in the United States. But loosening of US trade restrictions with the Soviets has allowed more software and hardware to pass behind the Iron Curtain.

MicroPro says the Soviets will jointly develop and distribute a Russian version of WordStar, still the most widely used word processing program in the world with an estimated 3 million copies sold.

Other companies being visited by the 6 Soviet scientists include California Microelectronic Systems and Databank Computer Corporation, which plans to sell IBM-compatibles in the U.S.S.R.

Interestingly enough, MicroPro reports that the Soviet sale did not come without a hitch. The company was reportedly given implicit orders by the FBI not to show any communications software nor a computer based on the Intel 80386 microprocessor.

Apple Computer reports that new export rules will make it possible for Apple computers to be shipped to the Soviet Union and Eastern Europe. Apple's spokeswoman says despite the relaxed rules, Apple has no immediate plans to ship computers to the Communist Bloc.

Perestroika, Dataease Style

TRUMBALL, Conn. (NB) — Software developer DataEase International Inc. will begin selling English and Russian versions of its software in the Soviet Union. Arun Gupta, president and chief executive office of DataEase, says his company has received Commerce Department approval for sale of the DataEase database software for IBM PCs and clones in the USSR. "Under the Soviet's economic restructuring program, Perestroika," Gupta told the media, basic business and purchase decisions will now be made directly by individual managers, who will need tools like DataEase to automate their organizations efficiently. "Six-year-old DataEase will also market its software in Eastern Bloc countries.

The U.S. Department Of Commerce in Washington will ease its export control rules so that more powerful computers can be sold in the Peoples Republic of China. The new rules will mean that most Digital Equipment Corp. VAX computers, most Sun Microsystems workstations, and some IBM mid-range computers can be shipped routinely to China

MITI To Sell To Communists

TOKYO (NB) — The Ministry of International Trade and Industries (MITI) has announced that it will eliminate some restrictions on the export of computers to China as early as in the middle of September. Also, MITI is easing up on its restrictions regarding the shipment of computers to the Soviet Union and Eastern Europe at the end of this month. Though the maximum processing capacity of computers currently allowed for export to China is 285 megabits per second, that figure will be upgraded to 550 megabits per second. It is expected that the new, more lenient rules will stimulate more trade with China by the fall.



NORTHWEST DIGITAL LTD.

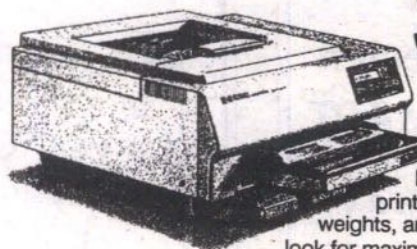
SUMMER SAVINGS!

HEWLETT-PACKARD LASERJET SERIES II PRINTERS
WITH FULL WARRANTY

Now Only:

\$2,595.

(cash and carry only)



The Hewlett-Packard Laserjet Series II printer provides true publication-quality printing with the ability to mix different fonts, styles, weights, and orientation to give each document a custom look for maximum impact.

Available at:

Northwest Digital Ltd.

#95-10551 Shellbridge Way AND
Richmond, B.C. 270-7261

Northwest Digital Ltd.

3352 Tennyson Ave.
Victoria, B.C. 382-2341

Canada's Largest Authorized



HEWLETT
PACKARD Dealer.

* Price subject to change without notice. Offer not valid in conjunction with other promotions.

PAGEMAKER FREEHAND ILLUSTRATOR '88 IMAGE STUDIO

Other Software or Peripherals???

Now you can purchase your software and hardware accessories through the leading Linotype Imaging Centre in British Columbia!

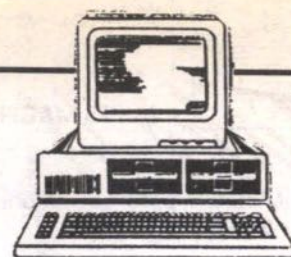
QuickSet

Until further notice, QuickSet will be including either training or printouts with any purchase of software. Amounts will vary according to the software purchased. As an example, Illustrator '88 will include 2 hours of training or 10 letter size Linotype printouts* when purchased for \$650.00.

Call for more information:
(604) 685-2777

We offer a 24 hour modem service for uploading PostScript files to be printed to the Linotype Imagesetter.

*Printout time limited to 5 minutes per letter-size.



ACCOUNTING WITH PICTURES

*We like to make
everything
perfectly clear ...*

Major new software accounting concept presently being released across Canada. Opportunities available for dealers with solid business background and knowledge of accounting and/or computers. Excellent projected earnings. For information call:

RMS SYSTEMS INC.
1-800-663-2358
In Vancouver
(604) 681-9575



As seen in
PC Magazine

Systems that don't bite back! Are you concerned that your Ventura Publisher and AutoCAD software won't run properly on a Local Area Network? IMT introduces North America's most exciting and reliable LAN system, LIFENET by Univation.



Suite 608, 837 W. Hastings St.
Vancouver B.C. V6C 1B6
(604) 683-5542

Integrated Micro Technology Inc.

C A D D

Applications...

By Design



DATA TERMINAL MART
THE EXPERTISE YOU EXPECT.

4320 Dominion St., Burnaby 435-4377



**Harbinger
Services**

Consulting & Planning Services for Construction & Industry

Complete Project Planning Services

- Consulting and Training
- Project Planning Skills
- Structured Project Planning
- Software Support

Rolf Drommer (604) 941-3789

Suite N, 2540 Shaughnessy Street Port Coquitlam, B.C. V3C 3W4 FAX (604) 464-9958



DESKTOP SOLUTIONS

Successful Desktop Publishing

Desktop Publishing Service
Design, Layout, Typesetting &
Production of:
Tabloids
Magazines
Technical Manuals
Sales Brochures
Proposals
Etc.



Vgroup DESIGNS
offers successful graphic design solutions for your print and visual communication needs. We use the most current (and appropriate) desktop or traditional methods to design and produce your advertising, marketing and communication materials.

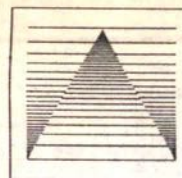
Apple & IBM
Ph. 734-3594
Fax 732-4280

Virus Watchers

12 Considerations For Virus Protection Packages

1. Amount of impact the package may have on your computer's performance. If the package is "RAM Resident," does it noticeably slow down your machine's operations?
2. Level of dependency on operator intervention. Does the package require the operator to perform certain tasks on a regular basis in order for it to be effective? Does the package require much time to install and keep operational?
3. Impact on productivity: Annoyance level. Does the package periodically stop processing and/or require the operator to take some action.
4. False alarms: How does the package handle situations that appear to be viruses but are legitimate actions made by legitimate programs? Are there situations where legitimate jobs will have to be re-run or the system re-booted because of the protection package? How frequently will this occur?
5. The probability that the package will remain in use? Will there be any interference or usage requirements that will discourage the user from keeping the package active?
6. Level of effectiveness it provides in combatting viruses: Will it be effective against viruses produced by someone with an experience level of: "Typical End User"? "Power User"? "Applications Programmer"? "Systems Engineer"? "Computer Science Professor that develops viruses for research purposes"? Which types of intrusion will it be effective against? "Covert Entry"? "Overt Entry"? Which types of virus damage will it detect? "Massive Destruction" "Partial Destruction" "Selective Destruction" "Random Havoc Destruction" "Annoyance"?
7. Does the software provide any assistance for "post mortem" analysis of suspected problems?
8. Impact on your machine's resources. How much RAM is used? Is any special hardware required?
9. Is the product compatible with: Your hardware configuration. Your Operating system version. Your network? TSRs?
10. Can the package be used by current computing personnel without substantial training?
11. Background of the publisher. References.. Who is using this or other products from this publisher? How is this company perceived by its customers?
12. Does the package provide any other useful benefits to the user besides virus protection?

Raymond M. Glath is the president of RG Software (2300 Computer Ave. Suite 1-51 Willow Grove, PA, USA 19090 (215) 659-5300), publisher of Disk Watcher Software.



DELTA COMPUTERS

#101-1624 - 56th St., Delta, B.C. V4L 2B1

JAMES MACPHERSON, A.Sc.T.

Microcomputer Equipment & Accessories
SALES • SUPPORT • SERVICE (604) 943-3331

UPDATE TRAINING SERVICES

ATTENTION PC USERS

Why waste time and money? Call
UPDATE at
688-2727

'We specialize in "in office" training and updating.'



AMIGA

COMPUTERS & ELECTRONICS

"WHERE COMPUTERS ARE FUN"

Vancouver's Best Selection on C-64 & Amiga Software
435-0113

New Location: 2 Blocks West of Boundary
3524 Kingsway, Vancouver, B.C., V5R 5L7

10% Off Software Purchase With This Coupon

**Skillful, articulate and aggressive
ZIM, R:BASE and DBASE
programmer/analysts and trainers
required for expanding custom
software division of
JUMP SOFTWARE LTD.**

Send credentials to:

Wesley Kenzie
3030 West 5th Avenue
Vancouver, B.C. V6K 1T9

Job/business contacts

Looking for a job, new contacts or more information about the expanding computer industry in B.C., Washington, Oregon and Idaho?

Northwest High Tech 1988 lists 450 computer companies, focusing on those that are expand-

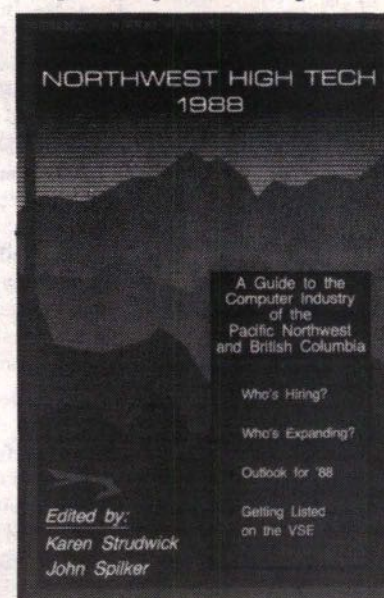
ing and hiring.

Save time and money.

Get the 192-page guide's listings on DOS disk and speed up tedious mailouts.

**\$14.95
paperback
\$49.95 disk
\$59.95 disk &
paperback**

Now available in bookstores or from:



Resolution Business Press

820-153rd Ave. N.E., Suite C-201
Bellevue, WA 98007
(206) 562-0707

In Vancouver, for further information, call

Milestone Publications

(604) 251-7675

WAIT!!!
Before You Heave Your PC
Out The Window ...

HORIZON SYSTEMS
Has The Answer!

(604) **591-2245**

11028 83A Ave. Delta B.C. V4C 2J5

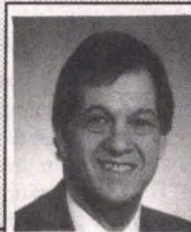
Let the Benefits of



in all winter with

Benelux 55 Fluorescent Tubes
for as little as 29¢ per tube, per month

Lighting Consultants of Canada
601 - 1025 Gifford Street, Vancouver, B.C. V6G 2P2



Gerry Abrams

683-4930



COMPUTER EMPIRE

• Our 4th Year in Operation • Over 35,000 Computer Items Sold •

Back To School Sale



REGULAR AT SYSTEM (6/10 MHz)

- Expandable to 12MHz
- 640K RAM
- 80286 CPU (IT board)
- 360K floppy drive
- NCL AT hard disk & floppy controller
- Mono/graphic card with printer port
- 200 W CSA power supply
- Clock & calendar
- Enhanced keyboard
- High Res. TTL monitor with swivel base
- Metal case with LED light, Reset/Turbo switch

\$1495

(Reg. \$1695)

DELUXE AT SYSTEM (8/12 MHz)

- 4 layers motherboard made in USA
- One MegaByte RAM (70ns)
- CPU 80286-12
- 1.2 MB floppy drive
- NCL AT hard disk & floppy controller
- Mono/graphic card with printer port
- 200 W CSA power supply
- Clock and calendar
- Enhanced keyboard
- High Res TTL monitor with swivel base
- Metal case with LED light, Reset & 3 exposable half height slots

\$1845

(Reg. \$1995)

MONTHLY SPECIAL

1.4 MB floppy (3.5") \$135
720K floppy (3.5") \$118

20 MB \$295 (with AT system purchase)
40 MB \$470

2400 Baud internal Modem \$188
1200 Baud internal Modem \$109
ATI Graphic Solution Card \$185
Logitech Mouse \$99

NEWVIEW ACCOUNTING \$950

NECP2200 Printer \$585
Fujitsu DL3400 Printer \$758
Roland PR1215 Printer \$695
Roland PR2450 Printer \$995
HP Laserjet II Printer \$2595
HP Laserjet Desk Printer \$1295

DEMO UNIT SALE

NEC Multisync color monitor \$795
SAMSUNG TTL monitor \$92
MITSUBISHI Multiscan moitor \$650

COMPUTER RENTALS

XT System \$59/week
AT System \$89/week
(Ask for monthly discount rate)

Prices subject to change due to escalation of RAM prices.



COMPACT TURBO XT SYSTEM

- 640K RAM
- One 360K floppy
- ATI graphic card
- Clock and calendar
- Serial, parallel ports
- CSA power supply
- AT style keyboard
- High Res. Multisync monitor with swivel base
- Compact case
- MS DOS & GW-Basic with manuals

\$998

(Reg. \$1195)

LAPTOP/ PORTABLE

NEC Multispeed
9.54MHz Backlit
640K 2 Floppies \$2675
640K 20 MB \$3795

FAX MACHINE

MURATA (Japan) \$1550
3 uses: Fax
Photocopying
Telephone

4168 MAIN STREET • VANCOUVER V5V 3P7 • 872-1668

LOCAL AREA NETWORKS

*Looking for the lowest price?
Going for the cheapest sale?*

A Local Area Network represents a significant investment in computer equipment, but — more importantly — a major expenditure of your valuable time.

The lowest price does not necessarily reflect the best "deal". Select your LAN vendor with the same care you use in your most important business decisions. In the crush of people wanting to sell you a network, some organizations rise above the crowd.

Softrak is:

- A Novell Authorized Dealer
- A Novell Independent Software Developer
- A Computer Associates ACCESS Developer (26 man-years)
- A business computer solution company (60+ man-years)
- A Novell Network User (V2.11 10 stations)
- The ACCPAC ACCESS Consultant of the Year (1987)
- The ACCPAC ACCESS Developer of the Year (1988)



Softrak was formed in 1984 with a single goal -- to provide the best advice and products possible for business computer users. Our Network Products Division continues the tradition by providing our clients with a single-vendor solution to common business problems. We sell hardware to provide a complete solution and avoid "finger-pointing" when things go wrong. We don't believe in automation for its own sake — we believe in automation for **your** sake.

Phone Ian Frazer for the Softrak solution.

736-3741

*Do you expect good service?
Do you consider support important?
Do you want expert advice available to you?*

SOFTRAK
SYSTEMS INC.

#303 - 1661 W. 8th Ave. Vancouver

Boston MacWorld Show Report

MacWorld Expo Opens

BOSTON, Ma. (NB) — Before the deluge of the 30,000 attendants expected to attend this year's Boston MacWorld Expo, exhibitors from the more than 350 companies displaying at the show opened the doors to give press and invited guests a sneak preview of what to expect over the three day industry show opening Thursday August 11th.

Ever increasing in scale, this MacWorld Expo is expected to be the largest Macintosh-related computer event ever with exhibits and conferences filling three major facilities and every hotel in the city of Boston booked through the weekend.

Apple, Microsoft and Apple's software subsidiary Claris all announced new products during industry day (see next stories) and over 100 new releases or upgrades are expected to be unveiled during the course of the show. Some new products come from old-time Mac players like Jasmine (makers of hard disks and other peripherals) which has announced a new Postscript printer, and Mediagenic (formerly Activision) which has released new HyperCard applications including an upgrade of Dan Goodman's Focal Point.

Other new products come from recent additions to the Macintosh family of software and peripheral manufacturers. These include Dac Easy, makers of PC accounting software, which has released a Mac version of its popular Dac Easy Light accounting package, and Compugraphic, the world's largest manufacturer of computerized typesetting equipment, which is showing off its new range of typefaces available for the Mac.

Show planners in Boston, a city of long traffic jams, short-tempered drivers, and a major convention center still under construction, are counting on the efforts of several valiant shuttle bus drivers to unite the far-flung branches of what promises to be one of the most enjoyable and well-attended trade show in the city's history.

New Scanner, 4MB Mac II, Upgrades

BOSTON, Ma. (NB) — Apple's rumored scanning device was announced at MacWorld Expo on Wednesday August 10th. The 8.5" by 14" 300 dots per inch flatbed scanner is capable of importing pictures into PICT, TIFF or MacPaint file formats supported by most Macintosh applications.

The scanner, long anticipated by Apple watchers, comes bundled with software including AppleScan, a flexible imaging program which can capture grey scale at 4 bit/16 levels per scanned pixel. This package has a useful "preview" feature which allows users to quickly manipulate brightness and contrast on a 75 line "preview" version of an image setting parameters before a final scan.

The package also comes with HyperScan, a program written by HyperCard author Bill Atkinson, which allows photos, pictures or line art to be scanned directly into HyperCard stacks increasing the ease of integrating graphics into HyperCard stacks and applications.

The Apple Scanner has a suggested retail price of US\$1,799 and is available immediately from authorized dealers.

Apple also announced a top of the line version of its Macintosh II computer, the 4/40, coming with four megabytes of RAM and a fast 40 megabyte hard disk. Included in this announcement was the immediate availability of 1MB, 2MB and 4MB extension kits for all Mac Plus, SE and Mac II computers. Let's you think the DRAM drought over however, memory has its cost. Prices on all of Apple's RAM extension kits have gone up as a result of increased costs of supply. The price of 1MB is US\$499; 2MB, \$US 1199 and 4MB, \$US 2399. The Mac II 4/40 retails for \$US 7398 complete.

No end to the rumors of a new Mac CPU based on Motorola's top of the line 68030 microprocessor. No answers either except the statement of an Apple developer who, remarking on Apple's enormous surplus of R & D funds, told reporters "if it sounds like it's a good idea, assume the company is working on it."

Works 2.0: Significant Upgrade

BOSTON, Ma. (NB) — To the surprise of almost no one, the long anticipated release of Microsoft Works 2.0 was announced during a press conference on Wednesday August 10th during industry day at MacWorld.

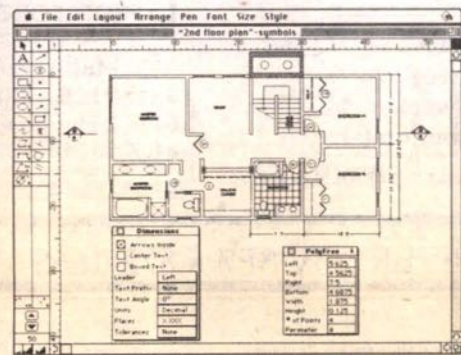
Microsoft has enhanced its tremendously popular integrated software package for the Macintosh by adding a 60,000 word spellcheck program to

the word processing module, expanding the packages spreadsheet to 256 columns by 16,382 rows, adding color support for the Macintosh II, Print Preview to view each page of a document before printing, and recorder macros to automate key-strokes of often-repeated tasks.

Support for columnar text and an enhanced set of object-oriented drawing tools give Works the potential for limited desktop publishing. Microsoft representatives displayed logos, presentation graphics and a newsletter created using the program's word processing and drawing tools. While not award-winning works of art, they demonstrated quality work needed by the small business customer who are primary purchasers of Works.

Works 2.0, scheduled for release in October, retains its original price of US\$295. Upgrades are available to users of earlier versions of the program for just US\$75 and Microsoft is offering free upgrades to anyone purchasing version 1.0 after August 1st.

Alongside this newly-enhanced version of Microsoft's integrated software, the company demonstrated upgrades of Microsoft Word, Power Point, and recently-released products like Microsoft Mail, demonstrating that lawsuit or no, the world's largest software company is not about to give up its dominant share of the lucrative Macintosh software market.



Claris CAD lower priced 2-D drawing package

Claris Teams Up For CAD Package

BOSTON, Ma. (NB) — Claris Corporation, Apple's software subsidiary, made a bold move to define itself in the Macintosh application market with the announcement of Claris CAD, a powerful computer aided design package for the Macintosh.

The product represents a venture of the company into new territory, as opposed to the upgrades of well entrenched products which have been their hallmark up until now. Claris CAD is an interesting package offering a variety of drawing and geometric construction tools useful in the architectural and engineering design fields.

The company hopes that the package's firm foundation in the Mac user interface (as opposed to other products which Claris points out only port CAD products from other environments) will give it an edge over the competition in an increasingly populated field of products. The company drew upon the expertise of co-developer Computer Aided Systems for Engineering (C.A.S.E.) a Cincinnati-based CAD software developer to ensure the product answered the long term needs of users and fit in with major CAD standards such as ANSI Y14.5, ISO, DIN, JIS and BS308.

Price may also work in Claris's favor. The package's retail price of US\$799 makes it one of the cheapest 2-D CAD packages on the market. As an added benefit, authorized MacDraw II owners can upgrade to Claris CAD for US\$399.

Presentation Products

Boston, Ma. (NB) — Last year's MacWorld Expo featured advances in color hardware, mass storage devices and, of course, HyperCard. This year's convention is best characterized by the industry rising to meet the challenges offered by last year's revolutionary additions to Mac technology.

Presentations: Color applications have moved well beyond gratuitously tinting scroll bars and icons. The most promising color application, desktop presentations, have several new proponents including Aldus with its Persuasion package, Ashton Tate with Applause, Cricket Software with Cricket Presents and Microsoft with its newest version of Power Point. All of these programs boast a wealth of color and layout features. While manufacturers argue the differences between

products, the upshot of their competition is that presentation planners and artists will be spoiled for choice during the months to come.

File Management: Twenty, forty, eighty and two-hundred megabyte storage devices and the promise of mammoth storage with CD-ROM have prompted an emphasis on file management products and utilities. Alpha Micro of Santa Ana, California released a Macintosh version of its Videotrax hard disk back-up system which allows the use of a VHS video cassette recorder as a tape backup unit, saving up to 80 megabytes on a two hour standard tape cassette. Disk searching utilities such as Gopher by Microlytics, Inc. were also on display.

HyperCard: Finally HyperCard applications abounded including a new version of Danny Goodman's Focal Point, HyperDialer, a phone dialing accessory from DataDesk International, Hypersource CD from Prism Technologies of Canada, which contains over 400 megabytes of useful information on the Macintosh industry, and (they're back...) new additions to Smustack, the X-rated HyperPornography product.

Jasmine's New PostScript Printer

BOSTON, Ma. (NB) — Jasmine Technologies, a leading manufacturer and distributor of hard disk drives and other mass storage peripherals, formally announced the introduction of DirectPrint, a



Jasmine's new Postscript Direct Print Laser

300 dot per inch Postscript-compatible printer for the Macintosh.

The new printer competes with Apple's own LaserWriter II series with an expected price tag below US\$4000 (lower than Apple's NT which is priced at US\$4,500 and the NTX which sells for US\$6,500). The device uses a Postscript clone driver developed by Qume Inc. and manufacturers ensure compatibility with all Macintosh Postscript applications.

This announcement heralds Jasmine's first foray outside of the hard disk market in which it has thrived during two years since it introduced its first 20 megabyte external hard disk. During that time the company has developed a range of external and internal hard disk drive units, tape backup systems, and the popular MacBackPak portable hard drive. This line was enhanced today with the addition of new SCSI devices, a new DirectTape 40 megabyte hard disk backup system and an enhanced set of BackPak disk drives with optional removable modem.

Jasmine's new move into the printer market is part of that firm's strategy to broaden its base, using the reputation for quality and good will it has developed over the years to try and become the world's leading manufacturer of Macintosh peripherals.

The new printer comes complete with three megabytes of RAM and operates at a rate of 4 million instructions per second (MIPS). The machine is loaded with thirty-five typefaces and will sell for under US\$4000. This lightweight unit (35 pounds) is expected to ship in October from San Francisco-based Jasmine Technologies.

Sculley Latest Hype: "Pinstripe Hypercard"

Boston, Ma. (NB) — Apple President John Sculley gave the keynote address to this year's MacWorld Expo in Boston, Ma. before a sell-out crowd at Boston's newly-renovated Wang Center. Reflecting Apple's strategy to consolidate its advantages during a year when no hardware surprises are expected, Sculley spoke of the company's successes in the business market as well as Apple's continued dedication to HyperCard.

"Pinstripe Hypercard" was the nickname journalists afforded the latest of Apple's wishful think-

ing videos which Sculley showed during the talk. The video featured a corporate computer jockey mousing around a map of the U.S., presenting sales figures to his slack-jawed female associate who can only sit in amazement as HyperCard makes mincemeat of company statistics. Hmmm. Videos featuring use of HyperCard by ABC News and other corporate entities illustrated Apple's decision to nurture the fledgling application until it finds its own niches in the business world.

Microsoft Still Loves The Mac

Boston, Ma. (NB) — Microsoft Chairman Bill Gates keynoted the second day of MacWorld Expo in Boston, highlighting his continued commitment to the Macintosh line of computers despite the continued you know what over look and feel.

Discussing his company's recent new products, QuickBASIC, and a new update of Microsoft Works, Gates let it be known that his long-term dedication to creating applications for the Mac's line of computers is unshaken and that he is looking forward to creating new, more powerful applications for Mac machines entering new business and entertainment environments.

The lawsuit reared its ugly head only in response to a reporter's question. Gates dismissed speculations of the suit dragging out for years, stating that he hoped the suit would be expedited, leaving the company's agenda by the end of the year.

Mac To the Future

Boston, Ma. (NB) — Bill Gate's keynote address was preceded by a panel of blue ribbon experts discussing the future of the Macintosh in a talk entitled "The Next Five Years of the Macintosh: Visions of the Future." The panel featured Jonathan Rotenberg, president of the Boston Computer Society, David Bunnell, editor-in-chief of "Macworld," William Campbell, president of Claris, Guy Kawasaki, former Apple evangelist and president of ACIUS, Robert Metcalfe, chairman of 3Com and Apple Fellow, and visionary Alan Kay.

In tribute to Apple President John Sculley's vision of the future, their description of tomorrow's Mac bore a striking resemblance to the "Knowledge Navigator," the portable, networked, "hyper-linked" computer powerhouse which has been the buzz vision around Apple for the last year.

Metcalfe, whose company is a leading provider of computer networking products, discussed the diskless computer. Alan Kay (who was part of the Xerox Parc team which originated many of the Mac's user interface concepts) hoped for a portable machine freed from the desktop, possibly freed from the laptop. Boston Computer Society President Jonathan Rotenberg, ever the user advocate, called for a cheaper Macintosh computer ("somewhere around US\$200").

"Macworld" Editor David Bunnell used the time given him before Bill Gates spoke to slam OS/2 against a few walls. Too big...too complicated...too wasteful...who needs it, were phrases tossed around the hall by speakers and press. Never let it be said that visionary talks of the future should interrupt partisan issues of the present.

Two New Mac Publications Debut

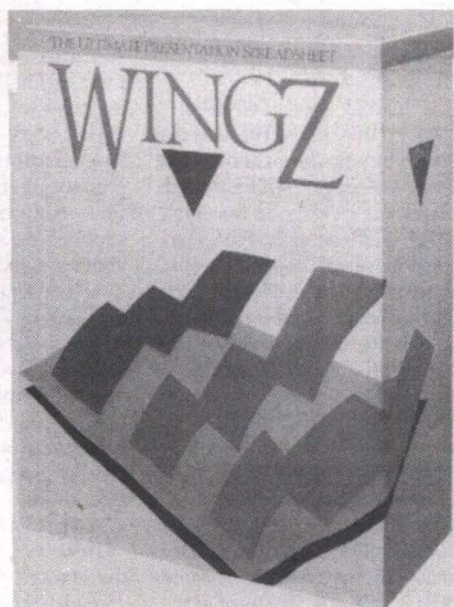
Boston, Ma. (NB) — Despite the recent demise of the Macintosh weekly "Macintosh Today" and an expected shake-out in the large computer publication industry, two new Mac magazines were announced at MacWorld, aiming at different segments of the business market.

"MBJ the MacBusiness Journal," published by PiM Publications of Fall River Massachusetts, is dedicated to the business end-user who wishes to find out about Macintosh applications as they are used in real-life situations.

"MBJ has been created as a medium through which business users share their ideas, successes and complaints," said Don Hicks, managing editor, in MBJ's premier issue. "Through this open forum, MBJ hopes to secure a better business environment for the Macintosh."

Despite claims to be "the first magazine dedicated to the Macintosh business user," MBJ will face stiff competition from magazines such as "Macintosh Business Review" published by VNU and the many other Macintosh magazines which give more and more space to business concerns.

MacWorld



The second magazine, "Macintosh News" from CMP Publishing of Manhasset, NY, will concentrate on news and features for resellers, integrators, and developers of Macintosh products. With this tight focus, "Macintosh News" hopes to play a role in the Macintosh community similar to the one enjoyed in the PC world by such publications as "Computer Reseller News."

Connectivity & Database Products

Boston, Ma. (NB) — The power of the Macintosh as part of a serious business system has been enhanced by a number of new products designed to connect Macs to other kinds of computers in a network.

Oracle Corporation of Belmont, California announced a Macintosh version of its powerful SQL database, indicating Oracle's observation that the Mac is becoming part of corporate mainframe environments and needs to be connected with Oracle databases located on IBM and DEC minis and mainframes.

This announcement was in addition to Netware products on display by Novell to connect Macintosh computers into Novell local area networks of PCs, minis, and larger computers.

Network giant 3Com announced high performance networking solutions for both the Mac SE and the Mac II, including a line of products to connect the Mac to Ethernet and heterogeneous computing environments.

The Apple-DEC alliance, while not producing a stream of products, has a great deal to do with the Mac (until recently only considered a graphics and desktop publishing machine) suddenly entering the world of high-end business applications. The two companies' recent joint servicing agreement goes a long way to enhance Apple's long-term strategy of making powerful personal computers like the Mac II part of corporate America's data processing systems.

DAC Easy Light For the Macintosh

Boston, Ma. (NB) — Dac Software of Dallas, Texas formally announced the introduction of a Mac version of its popular PC accounting program Dac Easy Light.

Long heralded in the PC community as a maker of low cost, easy-to-use accounting packages, Dac released Dac Easy Light, a scaled-down version of its business accounting package introduced last year to capture the small business and home office PC-based accounting market.

The new Mac version of this package can be used as a general ledger system, it can generate invoices and statements, do invoice processing, write checks and handle most of the tasks involved with day-to-day small business accounting.

Written in object Pascal, Dac Easy Light will take full advantage of the Macintosh interface as well as bring to the Mac accounting field Dac's major attributes of high performance and low price. The package, slated for shipment in September, will retail for US\$69.95.

Wingz still in the Wings: Next time for NeXT **Boston, Ma. (NB)** — The second day of Macworld Expo ran smoothly with all systems go despite record-breaking crowds and outdoor temperatures in the high 90's. Other than long lines at Informix's "time machine" booth, this year's MacWorld is the

most navigable in recent memory. (Informix publishes Wingz, a major new spreadsheet, which has become this MacWorld's FullWrite Professional with elaborate time-related displays promising marvels yet to be delivered. The same promises were promised at the January MacWorld Expo in San Francisco where the time machine booth touted Wingz).

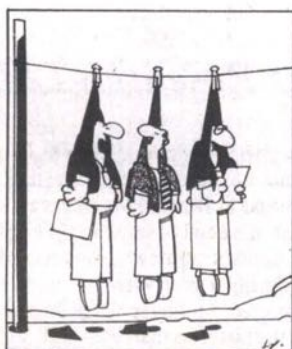
A certain confidence radiates from the show floor this year as the Mac seems to have proved its case that it is a serious business machine. Oracle, Novell, and 3Com's delivery of their high-end database and networking products into the Mac environment has helped make the Mac a serious choice as a mainframe front-end or network node (see related story).

While no one is substantiating rumors of an upcoming Mac II based on Motorola's top-of-the-line 68030 processor, Motorola itself is on the show floor pushing the new chip and little doubt remains that 68030 is part of Apple's plans to push the Mac II into the range of workstation-class machines. With Apple's booths stressing the company's commitment to education and a 030 machine in the wings, Steve Jobs had best get his NeXT educational workstations out of the lab and into the classroom before his old company cuts him off at the knees.

3M's Simple Solution for Colour

Boston, Ma. (NB) — A partial solution to the high cost of color presentation graphics was on show at MacWorld. 3M, the tape giant, had on display its model 4550 transparency maker and a new film which can take output from a laser printer or photocopier and within seconds transfer the black and white image to transparency in red, green, blue or violet.

The 3M system is remarkable speedy and produces mono color transparencies at a reasonable price. Multicolor graphics are solved in a rather primitive fashion — stacking up mono transparencies on top of one another. While the product represents a step backwards from the colorful and complex graphics available in new presentation packages from Aldus, Cricket Software, and Ashton Tate, it may satisfy the simple requirements of that old-fashioned presenter who just wants to get his words on the screen with a little bit of flair and a very low price.



YEAH... WHEN I FIRST HEARD OF 'ON-LINE CONFERENCING', I THOUGHT THE SAME THING...

Free!

Macintosh™ Software

Buyer's Guide

16 Pages of product descriptions and prices for over 100 of the most popular business software for the Macintosh.



Mail this coupon to:

Salt Spring Software, 123-101 Meadowbrook Drive,
London Ontario, N6L 1C7, 519-652-9595

Company _____

Name _____

Address _____

City _____

Province _____

Postal Code _____

Macintosh is a Trademark Licensed to Apple Computer, Inc.

Deadline Blues?

Need short-term,
trained Macintosh
Operators with or
without equipment?

Introducing a
revolutionary
Office Temporary
Service....

THE
MAC
FORCE

591-5550

Divisions of...

**MOSTLY
MAC**

Complete Publishing Facilities

- Desktop Productivity Centre & Services
- Weekly/Monthly Computer Rentals
- Scanning and Laser Printing
- Hourly Workstation Rentals
- Copy Writing and Editing
- Custom Graphics
- Photography

The
**DeskTop
PrintShop**

591-5550

BACK TO SCHOOL SPECIAL

Laser 128EX

Apple IIe, IIc
compatible

\$795

Computer comes fully configured with 192K, 1 floppy, 80 column text, high res graphics, parallel, serial, joystick & video ports and amber monitor.



Panasonic 1080i or
Roland 1012 Printer **\$269**

NEW LASER TURBO XT-2

IBM XT COMPATIBLE

With 10MHz 8086,
640K, 2 Floppy drives,
DOS and
Amber monitor.

\$1295

(Reg \$1393)

IBM XT/AT are registered trademarks of IBM Corporation.
Apple is the registered trademark of Apple Computers Inc.



MICRO CENTRE
computers • software

Phone:
430-1256

2273 Kingsway (at Nanaimo)
Vancouver B.C. V5N 2T6

Out of Town:
1-800-663-4088

BED-SPREAD Review

Companion Program for Bedford

QuickDiamond Software

122C-11831 80th Avenue Delta, B.C. V4C 6X1 (604) 645-6932

This interesting program with its catchy name is advertised as the Perfect Bedford Companion. For those of you who do not know what Bedford is let me explain. Bedford, from Bedford Software Limited, is an integrated accounting software package designed for small business. The entire program consisting of, General Ledger, Payables/Receivables, Inventory, Canadian Payroll and Jobcost module is contained on one standard 360k floppy disk. Bedford is fast, easy to use and is highly rated by PC Magazine (*editors choice September, 1987*) and others. In my opinion Bedfordtm is a very good program that is easy to learn and comes with a good manual. Bed-Spread from QuickDiamond Software is advertised as a companion program offering features and benefits not found in Bedford.

System Requirements

Hardware and operating system requirements listed in the Bed-Spread manual are an IBM-PC XT compatible computer with 640kB RAM and MS-DOS version 2.0 or higher. A parallel printer with graphics capability is also recommended. The manual also states memory resident programs are not recommended. You should also have a system that can display CGA graphics if you want to see the graphs produced by Bed-Spread.

Installation

I installed and tested Bed-Spread on one of our Zenith IBM XT compatible computers complete with a 10MB hard disk drive monochrome CGA compatible display and a Roland PR-1011 printer. This is a turbo XT running MS-DOS 3.1 with 640kB RAM and no TSR programs loaded. Installing Bed-Spread is easy. A batch file creates the sub directory required and copies the files from drive A: to your hard drive. To install Bed-Spread all one must do is log onto drive A: and type "INSTALL D:" D: being the drive you would like to install the program on. A word of caution. The install batch file may replace your config.sys file with the one supplied with Bed-Spread. Once the installation process is finished you will have a new sub directory named DIAMOND complete with all the files from the three diskettes supplied with the program.

How It Works

There are two main programs in Bed-Spread, IMPORT and QD. Import is the program used to convert exported Bedford files to Bed-Spread format. QD is the spreadsheet program that produces the

spreadsheets and graphs. Before you can start using Bed-Spread you must export the information from your Bedford data files. There are no links to the Bedford program from Bed-Spread so you must export every time your data changes. If you have never exported data from Bedford I suggest you review the Bedford manual before proceeding. Bed-Spread requires the General Journal and Trial data files to produce its reports and graphs. Using the sample data supplied on my Bedford program disk the export procedure took about two minutes, after I selected the right export format and sub directory from within Bedford.

Importing From Bedford is Slow

The next step is to use the IMPORT program to change the exported Bedford to Bed-Spread format. This process consumed about 8 minutes. Now you are ready to use Bed-Spread. Well, almost. To create spreadsheets takes even more time. The time required to create the monthly spreadsheet was eleven minutes. This three step process to just view your data in spreadsheet format, in my opinion, is to complex and takes too much time.

Changes In The Works

However, QuickDiamond tells me they are working on reducing the amount of time required to produce spreadsheets. Viewing a spreadsheet once it is created, was not a very pleasant experience. Moving around the screen was a very slow process with the cursor lagging far behind the keystrokes. Error handling is poor. On some errors you end up back at the DOS prompt. This type of performance is not acceptable. Software should be fast and easy to use, especially when you are asked to pay \$149.00 (suggested list price) for it. While it is true Bed-Spread produces reports and graphs that Bedford alone cannot, this program has some serious drawbacks. The program itself is easy to learn how to use, it is not easy to use. It is slow and cumbersome. The manual is poorly printed and hard to understand. The manual does not have an index and a tutorial is not included. When last I talked with QuickDiamond I was told that these problems are being addressed. The people at QuickDiamond Software have a good idea but this program (Bed-Spread version 2.1) still needs a lot of work before I can recommend it.

David Oberman is Senior Consultant at Accel Computer Associates a Vancouver based Consulting firm specializing in accounting systems, desktop publishing and local area networks.

ParaMed

Medical Billing Package

- Electronic Billing / TP11
- BCMACC approved
- Full Service Support
- User friendly
- Affordable
- Established User Base

For Further Information Call (604) 939-6461 or 1-800-242-8591



SGA Systems Research Ltd.

A Division of Paracomp Technologies Inc.

Pacific Medical Software User Group

a newsletter for the on-line medical community

Volume One Issue One

USER GROUPS : WHAT THEY CAN DO FOR YOU !

Learning to operate a computer is not a comfortable venture even at the best of times. Especially if it means converting what seems to be a fairly efficient medical practice into what could possibly turn into an uncomfortable daily annoyance. Getting to the point where the computer system is working for you rather than the other way around means you have get past the steep learning curve of automation. User groups will help you do just that.

Everyone needs help at one time or another. User groups have been formed to serve this very purpose. The monthly meetings, on-going seminars, electronic bulletin boards for remote conferencing with other users is precisely why user groups are formed. Satisfaction with the computer comes with frustration free productivity increases. Only by getting past these training hurdles will MOA's and doctors be truly happy with their system.

One of the main advantage for consulting your fellow members in a user group is that the information provided is coming from an unbiased source. We will strive to make objective criteria available through the newsletter and training seminars, as well as regular monthly meeting speakers. We will be successful if we can help the members make more informed decisions as well as get you fully productive with your system.

Another key reason for belonging to a user group is that it will continue to exist for as long as there is a need for it. Consequently, many user groups have literally become "computer-user orphanages" for members whose hardware or software vendors are no longer in existence. This intangible support can be critical to medical offices as there is a major concern with the long-term solvency of medical billing vendors. Are they diversified enough to handle a saturation of their marketplace, the medical practitioner? Are their software support fees sufficient to maintain the level of support required? On-going changes in government regulation requires an evolving medical billing software product. Is your vendor there for the long-term?

Most user groups have members with a wide range of experience and expertise. The spectrum varies from the absolute beginner, those who have a working knowledge of their systems to people who are "power" users. Often user group members' expertise

breaks down into specific types of applications- word processing, telecommunications, spreadsheets, data base management etc. They can offer a wealth of information outside your present applications and requirements. Again, the information is coming from the user community and not the vendor.

Speaking of vendors, while considering one company's product or another, if you mention that you are a member of a user group, chances are they will be more detailed and considerate in their demonstrations in hopes of positive referrals. Also, many vendors have discounts or special prices for user group members.

Once you have decided on a particular purchase item it is always a good idea to consult others to see if anyone is considered a similar pur

chase. Buying groups are considered to be the strongest negotiating force in business today.

On a closing note the Pacific Medical Software Users Group will also be forming "Special Interest Groups" (SIG's) within our membership structure. These will be formed from those people who have chosen a similar software package. It is hoped that the vendors will participate in these separate meetings so as to greater communication between users and their ongoing development and evolution of the product. Any recognized problems or software limitations may be more quickly addressed if presented by the SIG group. This will allow the vendor a quick feedback of their users needs so as to set development priorities.

Kevin Brawley
MSUG Vice President

Dear Doctor/Medical Office Assistant:

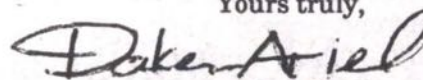
This newsletter insert is to introduce you to the Pacific Medical Software User Group. We are a microcomputer user group dedicated to serving the medical community in their transition to electronic billing. The current government billing requirements have created a real pressing need for an independent user-support group for new medical software users. We will be providing the following services to the membership:

- ☐ Monthly meetings at the BC Club which will highlight different speakers on topics of interest to the membership
- ☐ An informative monthly newsletter with a variety of articles from users, government and suppliers
- ☐ Various low cost seminars on topics of interest by knowledgeable seminar leaders. The present list of seminar topics include "Understanding Modems", "Hard Disk Management", and "Backing Up your Data: What are your Alternatives ?"
- ☐ Sponsorship of various additional activities such as the Medical Software Exhibition, a software trade show featuring many of the approved BCMA software vendors.
- ☐ Access to the PMSUG electronic bulletin board system which we plan to stock with over 200 Mb of free public domain software accessible through your modem

The annual individual membership dues are \$35.00. We hope that you take advantage of this association by joining. More important, we hope you participate to make it a valuable compliment in your automation knowledge and training. Why not submit an article if you have valuable experience that will make it easier for someone else in their transition to electronic billing.

If you have any suggestions, feel free to call me at 736-5039. We look forward to your participation in the user group activities. Happy computing!

Yours truly,



Daken Ariel
MSUG President

P.S. Don't forget to apply for a membership for free admission into the Medical Software Exhibition.

THIS ISSUE:

User Groups; What they can do for you!

How to Evaluate Medical Software

Medical Software Exhibition

Electronic Bulletin Board Systems: Why use them?

TECH TALK:

Menu Programs

Undeleting Files

Evaluating Hard Disks

Video Card Terminology

Floppy Disk Drives Explained

NEXT ISSUE:

Modem Review

Optimizing Tips for Your Hard Disk Drive

Software Vendor Association Update

Do I need Power Protection?

Software Exhibition Exhibitor Profiles

and much more...

SCHEDULE:

MSUG MEETINGS:
All monthly meetings are held at 7:00 to 9:00 pm at the B.C. Club 750 Pacific Boulevard W. Vancouver, B.C. (parking below the building)

INITIAL EVENT:

Medical Software Exhibition
September 19th
10:00 a.m.- 9:00 p.m.

FIRST MEETING:

October 14th
7:00 p.m.
Application for Membership at the door

UPCOMING SEMINARS & EVENTS:

"Understanding Modems"
Dale Jackaman
Technical Manager
BC Club
October 27th
7:00 pm
(Please reserve)

"Backing up your Data: What are your alternatives?"
Dale Jackaman
Technical Manager
BC Club
November 10th
7:00 pm
(Please reserve)

Pacific Medical Software User Group

989 West 8th Ave.
Vancouver, B.C.
V5Z 1E4
(604) 736-5039

Annual Individual Membership: \$35.00

Let me preface this article by saying that you may have specialized needs relative to your discipline that will determine your final software choice. Consider the following as a general guideline applicable to any specialized high support package. I consider this appropriate for medical billing software. Other aspects unique to medical software will be expanded upon in latter issues.

Long Term Commitment

Look for a vendor with a long term commitment to your industry. If they are in it for the quick profits, beware. They should have a track record in specialized software, not selling stocks, real estate etc..

I think it is safe to say that a long term commitment should be demonstrated by past performance, industry reputation, and the credibility of the vendor. This is true for any specialized software program, as the end-user needs long term support. It is even more critical in medical billing software. An evolving product is required to the changing government regulations and user needs.

Vendor Financial Stability

Financial stability is crucial. Because the majority of the medical practitioners will have purchased by April 1988, you don't want your vendor to disappear. Those who have major investments tied up in software development could become bankrupt.

Look for diversification in related products. This will allow them to keep active in changes in the marketplace. Look for depth in the company. Hopefully it isn't a one person show. That suggests you are at greater risk in relying on them. Than again you usually get better service with a smaller company as you are, hopefully, very important to them.

Look for a program that is user-configurable. If the vendor does cease to operate, you can keep yourself up-to-date on fee code changes as they occur. If you have any qualms about your vendor look for a source code clause that will release the code to the end-users if they go out of business. This will allow you to get your neighborhood programmer to make changes if they are required. If you don't have any qualms ask for it anyway. You may be glad that you did.

Problem Free Software Operation

The computer software term BUG is not a pleasant one. Nobody enjoys them, especially the user. Bugs are the term used for software glitches. When the software doesn't behave as it was designed to, it has a bug in it. This can be serious, especially when it affects your billing data.

Software development takes place within the context of a programming language. Some languages are more

difficult to debug than others. The newer languages tend to be modular so that the defective components of the program can be analyzed quickly. That is the theory anyway. All things being equal, (and they never are) generally programs developed in BASIC or COBOL are more difficult to debug than, say, C or even a development tool like dBase III.

From a user's point of view, look for a system that has many happy customer references. Also ask for the unhappy customers to see how they handled their complaints. Your vendor will probably say there are no unhappy customers...

Quality Computer System Components

It goes without saying that the equipment you buy will perform only as well as it's specifications. If you buy a cheap clone you should expect floppy drive problems, hard disk crashes and flaky components. Whole motherboards (and this is the nucleus of the computer) may have to be swapped out. Have I scared you enough? Good, because I don't like saying I told you so.

Look for top quality components, especially in the hard disk drives. Get a name brand; there are at least a dozen good ones to choose from. They don't always cost that much more. But they are always going to hold their value and cause less grief. In most cases, you get what you pay for.

A Thorough Hardware Service Contract

Whatever equipment you choose, you will want an excellent service contract. Look for on-site service of 4 hours or less. You don't want to be down for any longer than a day. Ask for replacement equipment if it takes any longer to fix. Third party support, such as Xerox, Bell Technical, or Honeywell Bull is the norm, but look to your vendor for in-house technical staff. Even though he may not be responsible for the warranty you will want to be assured that they can handle those in-between problems that occur.

On-going Knowledgeable Software Support

Look for software vendors who are software experts, rather than expert vendors. You want to be able to call

and get someone who knows the problems you face. Software support should include:

- Telephone support when you have a quick question
- A ready and willing vendor who will rush out and unravel some mess you managed to get into
- On-line support so that your vendor can log onto your system and troubleshoot directly from his office.

This means he can control your computer through specialized communication software. This is optional but useful to have. It means the vendor can immediately troubleshoot your particular problem.

Installed Users Both In Numbers, Size And Age

Look for a vendor with an installed base of users. See whether these users are a specific type of practice; larger clinics or smaller practitioners. This is an indication of who they are courting with their software features. Look for a vendor that is geared to long-term support fees. If they are making money supporting you can be assured that they will continue to do so.

An Easy To Use Clean Software Design

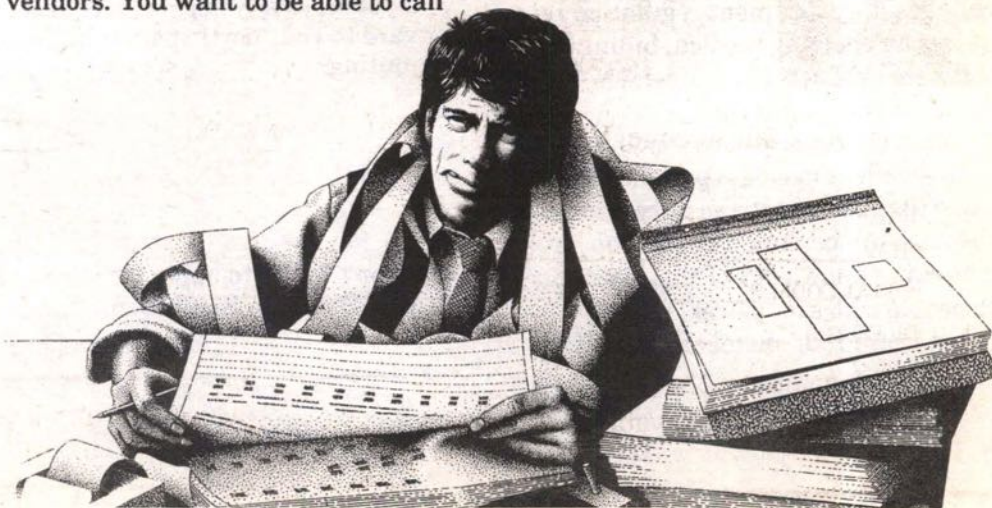
The Medical Office Assistant will love you if you will let her get involved in the demos and final decision. After all she is the one using it. Take some time to get a package that is easy to understand, easy to learn and easy to train others later on. If she doesn't understand it after the demo, let the buyer beware. If it is hard to train her now, it will be harder to train her replacement if she leaves.

A clean design refers to intangible and tangible aspects of its user interface (sorry, more jargon). Is it easy to see where you are in the program at a glance? Are the screen designs neat and uncluttered? Are they similar to your paper systems? Are all aspects of the software consistently designed?

A Reasonable Price

You should pay a reasonable price for the software. Expect to pay on-going support fees. It will be well worth it.

Daken Ariel
MSUG President



Pacific Medical Software User Group
Announces the
Medical Software Exhibition

Meet the approved BCMA software vendors. Find out which is the best billing system for your practice!

This Exhibition is NOT to be missed!!!

Monday, September 19th, 1988
10:00 a.m - 9:00 p.m
British Columbia Club
#10- 750 Pacific Blvd. South
(on the old Expo site)

Free for PMSUG members
(applications at the door)
or \$5.00

For PMSUG information contact:
Kevin Brawley or Daken Ariel at 736-5039

Why join the Medical Software User Group?

Informative Monthly Meetings

We will keep you up to date on new products and techniques with invited speakers and presentations. Each meeting will add to your productivity and comfort level in working with electronic billing. Sponsoring the Medical Software Exhibition is just an example of what the User Group is doing to help doctors make informed decisions.

Specialized Training Seminars

Our special seminars will cover important aspects of running a successfully automated medical office. These include getting the most out of modems, back up procedures and hard disk management. These seminars are offered at much reduced rates for members.

Electronic Bulletin Board Access

The User Group is establishing a Medical Electronic Bulletin Board for membership use. This will have over 200 Mb of free public domain software as well as utilities specifically geared for medical offices. It acts as an electronic forum so that you can phone in with your modem and discuss different issues of computer automation.

An Objective Monthly Newsletter

The monthly newsletter will bring important information to you on an on-going basis. We welcome your articles if you have an experience or knowledge valuable to the members learning curve in becoming successful in on-line computing

YES

**I wish to join the Pacific
Medical Software
User Group.**

989 West 8th Avenue, Vancouver, B.C. V5Z 1E4 (604) 736-5039

NAME: _____

ADDRESS: _____

CITY: _____

POSTAL CODE: _____

TELEPHONE: _____

Please enclose a cheque or money order for \$ 35.00 for a full one year membership made payable to the Pacific Medical Software User Group.

Why use the MSUG BBS?

A BBS is a communication system consisting of a computer hooked up to a phone line with a device called a modem that can be called by other computers and used as a on-line message and file storage database.

First of all, BBS stands for "bulletin board system" and as such can be similar in some ways to the ones we find on our office walls. A lot of messages, usually organized into various topic areas, are posted by the users of the system for others to read. What makes it so different is the ability to post a question and receive a direct answer from one or more BBS users, not to mention the cheerful round-table chitchat often develops among persons of similar professional interests.

User group BBS systems generally focus on self help and the passing along of useful hints. Novice users will quickly find plenty of useful tidbits posted by the more knowledgeable. In turn, as they gain knowledge, they will find that some of the questions posted can be answered by them and in doing so return some of the benefit they received earlier.

BBS use in North America has grown to the point where there are now tens of thousands of the systems available. Many of them are joined together in a variety of fashions enabling people to move messages around various parts of the globe for extremely low costs. Most BBS systems have one or more themes or concepts, depending on the interests of its owner or users, from games to desktop publishing, ham radio and various political and health interests.

Our BBS, the MSUG, is designed around medical automation. The BBS is divided into two areas; Files and Messages. The Files Menu is for the storage of public domain (free) programs, text files and other useful items that you can take and transfer to your computer. Next issue we will walk you through the procedure of logging on with your equipment. In the meantime we are outfitting our BBS with a 500 Mb CD ROM drive.

These CD ROM drives are ideal for archiving large amounts of information for future reference. Medical diagnostic referencing systems use them because of their large storage capacities.

Using the MSUG BBS is probably the first logical step in taking advantage of your on-line equipment. It will help your learning curve and accelerate the attainment of optimum fun on your computer.

Dale Jackaman, MSUG BBS Manager

Tech Talk

Menu Programs

No matter how you look at it, you will always be doing more than one thing on your computer. Even if after electronic billing the only thing you do is back up your valuable billing data periodically. Backing up your hard drive to floppies or a tape drive will require a degree of proficiency in getting around your system and knowing basic DOS commands. However if you have a menu program, you can automate this whole disagreeable but necessary process.

You will probably come to consider menu programs a practical necessity.

These invaluable programs can save time by automating numerous keystrokes in one keystroke. More importantly, they can save you grief and frustration. If you don't know how to back up a hard disk drive, chances are you won't do it, inviting sure disaster. With a menu option called BACKUP you can't go wrong.

There are many alternatives in menu software. The leaders are Xtree, Direct Access, and Norton Commander. My favorite is Lazy Susan because of its password controls and log files. Log files tell you how much time was spent on each program. There is even a freeware menu software called Ashell. Have your vendor show you a few. You will probably come to consider them a practical necessity.

Unerasing Files

When you finally do that inevitable action, delete a file accidentally, don't despair... That is if you have one of the many handy Unerase Utilities. Norton Utilities and PC-Tools, two leaders in this area, come to mind and are well worth having just in case. This is not the only function that these programs are capable of. PC Tools has an excellent backup program, which is far superior to the DOS backup program.

When you accidentally delete a file you must remember to stop what ever you are doing right away. By continuing, you run the risk of putting whatever new files you create on top of your deleted one, since the computer now thinks that disk space is available. When you delete a file, whether accidentally or not, the computer only changes one character in the drive directory information. These Unerase Utilities reverse this process.

Therefore if you don't want to be waiting for your vendor to undelete it for you, get one of these utilities.

Evaluating Hard Disk Drives

A hard disk drive is, in fact, several metal plates that spin at extremely fast speeds. Magnetic heads, moving across the plate surface, read magnetically stored information into memory. The drive capacity to store information is measured in millions of characters of information. Therefore a 20 Mb hard disk drive can store 20,000,000 characters of programs and data.

The biggest limiting factor in your computer's performance and reliability is the hard disk drive. Unlike electronic components, which can last virtually forever, hard disk drives are mechanical devices that are prone to failure. But serious computing requires them, so read on if you wish to learn how to evaluate them intelligently.

Hard disk drive speeds are usually measured in milliseconds of access time, ie. how much time does it take to find information on your hard disk drive. This does not reflect the speed with which it can put your stored data into memory to make it usable for you as the operator, nor is it a measure of reliability.

Unlike electronics, which can last virtually forever, hard drives are mechanical devices that are prone to failure.

A good hard disk access time is in the neighborhood of 30 milliseconds or less. To further evaluate your system you must look at how efficient the hard disk controller card is (which, for once, is descriptive of what it does). The two most important aspects to consider here are the interleave factor and the data transfer rate.

The interleave factor represents the ratio of the number of times a disk drive must spin to read a track of the hard disk into memory. A 2:1 interleave means the disk spins twice to read one full track of information. An inexpensive controller has a 5:1 interleave or more, whereas the newer faster controllers are 3:1 or 2:1. Theoretically the best interleave would be 1:1, but sometimes this can create compatibility problems between the computer components.

The data transfer rate measures the amount of time it takes to transfer data, once it is found, into the computer's electronic memory. It is usually measured in thousands of characters per second. The lower the interleave and the faster the

data transfer, the faster your computer's performance. Look for values in and around the 300,000 range for a good mid-priced machine.

How to measure reliability? There is no such thing as the perfect hard drive (sigh...) but look for the MTBF rating of 35,000 hours or more. MTBF means "Mean Time Between Failures". Something you don't want to experience. It is an average that indicates the rigors of the drive design and testing. This rating is not a guarantee. Pay for the difference, hard disk drives are not the place to economize.

One last thing to look at is the mechanism for moving the heads over the tracks. Cheaper drives use stepper motors which run hotter and are not as reliable as a voice coil drive. The voice coil is an electronic system for advancing the the read/write head directly to the track where your data is stored, rather than "stepping" from track to track.

In summary, look for voice coil drives with fast access times of 30 milliseconds or better, MTBF of 35,000 hours and 2:1 or 3:1 controller interleaves. Ask for a high a transfer rate, it will impress the salesman. A word of advice; a cheap drive is not worth it. You can pay for it now, or really pay for it later...

Video Terminology

Video cards are the electronic connection between computer and your screen. All the confusing acronyms related to the various video standards can be rather confusing and intimidating for all of us.

When IBM first introduced the Personal Computer (PC), they gave the computer user two choices; the color graphic adapter (CGA) which allowed color and graphics, but lousy text clarity, and the monochrome display adapters (MDA) which gave you sharp crisp monochrome text but poor graphics.

How much is enough? Most medical personnel will be happy on a Hercules-compatible video card and an amber monitor

Along came a smaller company, Hercules Corporation, which said that they could do better and proceeded to do so. They introduced the Monochrome Graphics Adapter which became the Hercules standard; and thus the question is it Hercules compatible?

How much is enough? Most medical personnel will be happy on



a Hercules compatible video card and an amber monitor of reasonable quality. If eyestrain is a problem you may want to try one of the new paper white monitors.

Floppy Drives Explained

Do you want 1.2Mb, 360K, 720K or 1.4 formats? 3.5" or 5.25" sizes? It can be pretty discouraging to make one's way through the verbiage. To make a long story short, your biggest use for these drives is to transfer your files to and from your hard drive to other computers in your office, or to a safe place for backup purposes. The higher the storage the better, saves having to stick 100 disks, or more, in your machine every time you want to back up your hard drive. If compatibility with other machines in your office is not a problem, go with the 1.2 Mb, 5.25" drives that are standard with most new computers. The diskettes are inexpensive and software availability in that format is common. When the AT microcomputers (80286-processor based) were introduced they quadrupled the floppy capacity by using a higher density for packing the information on the disk. That gave us the 1.2 Mb 5.25 inch floppy disk drive. They can also read and write to the older 360K disks, but not always reliably. The problem occurs when the 360K diskette was formatted on the 1.2 Mb Floppy Drive. Without an extension on the format command (FORMAT A: /4 will format it as a 360K floppy, although it still may not be reliable), the drive formats the floppy into a quasi 1.2 Mb diskette. I say quasi because there is only 360K capacity on the diskette. To minimize problems of sharing 360K floppies between AT and XT microcomputers, some users add an additional 360K floppy drive to their AT. You may want to do the same.

Along came the laptop computer and the 720K 3.5 inch floppy disk drive. It was a vast improvement over the 5.25 inch format as they were handy to stuff in pockets and use as temporary projectiles against rowdy patients and hospital administrators.

IBM has since accepted this type of disk as the standard, except that they doubled it's capacity to 1.4 Mb. These drives can also be added to XTs and ATs by adding a separate floppy controller card. We will, no doubt, see more floppy changes as time goes on. Change seems the only constant in the computer field.

Dale Jackaman
Technical Manager

COMPUTERIZATION OF BC's PHYSICIANS:

Medical Billing Goes Online

The BC government through the Ministry of Health, has recently introduced a new computer system designed to electronically link all physicians in the province to the Ministry's central site computer. This new system is called TELEPLAN II and is designed to replace the existing manual card and day sheet process that physicians use for submitting Medical Services Plan (MSP) claims to the government.

Under TELEPLAN II physicians will connect electronically through a modem with the MSP mainframe in Victoria. Once they have connected they will transmit all their claims, have those claims validated, receive error reports on rejected claims, and receive notification of acceptance of the claim for remittance. In addition to the processing of claims the physicians will also be able to do batch eligibility checks on patients who will be in the office the next day or do online eligibility checks on a patient while the patient is in the office.

Faster Payments

The main purpose for a system of this nature is to speed up the processing of the claims. Under the new scheme, claims can be submitted daily and validated for errors daily with corrections therefore being made in a more timely fashion. Currently the claims are keypunched from the MSP cards and run through edit routines on a bi-weekly basis, thus resulting in a long period of time to resolve edit errors.

To fit into this new system (which will be mandatory in 1989) the physician must either use a service bureau to process the existing MSP claim cards or buy a Personal Computer for the medical office which has software that can interface with TELEPLAN II.

Many Vendors In The Market

Physicians all over the province are now faced with the challenge of making some business decisions on what to do. There are currently many software vendors who are selling products to meet physician needs. With a deadline of computerization by early next year, physicians are being bombarded with many vendors trying to sell their products.

To assist physicians in working their way through the maze of hardware and software vendors the University of British Columbia's, Computer Science Programs Centre for Continuing Education and the Division of Continuing Medical Education have a series of seminars called "Computers in The Medical Office: A Practical Series". These seminars cover topics such as Computer Literacy, Microcomputer Workshop for Medical Office Assistants, Medical Office Systems and Database Concepts. The one course of this series upon which this article is based is called "Computerizing Your Medical Office: Doing the Business Evaluation".

Understand the Basic Terminology

One of the common problems many physicians have, is prior to doing a business evaluation they must first understand some of the computer terminology. It is important for the physicians to at least know the basics they need to look for such as: What is a processor? How does a modem work? How do you store data? What is a floppy?, etc.

Four Steps to a Successful Purchase

It is my belief that doing a business evaluation for a large clinic or for a single physician's office fall within the same methodology. The methodology follows four major steps:

- (1) Requirements Gathering
- (2) Evaluation of Software
- (3) Evaluation of Hardware
- (4) Implementation Plan

1) What Do Want and What Do You Need?

The first step is to establish some goals and a scope for your computerization project. Here you should decide what aspects of your business you want to computerize.

Having decided on the scope you should now involve your staff in the process of creating a list of what you need and want from this new system. A good starting point for is to look at how your office functions today. It has been my experience that at least 80% of a computerized system is merely taking what is presently done today and placing it on the computer. Many people do not realize that even if they do not have a computer in their office they still have "systems". These manual systems have probably been refined over the years to provide the best results given the options available. With the addition of the computer the "new system" will probably end up being an automated version of what is already done, based on many of the same principles.

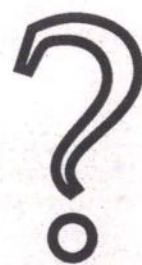
2) Evaluate the Software

Having built your shopping list of requirements, you are now

Continues on page 26



Who to buy from becomes the big issue for many doctors



MSP Teleplan 2

An alternative will be unveiled by
Multilog at the
Pacific Rim
Computer and
Communication Show

November 1-3, 1988

Pan Pacific Hotel Vancouver

See us at Booth #1

We are a step beyond on the future's technology...



North American Operations
505-1281 West Georgia Street
Vancouver, B.C., V6E 3J7
(604) 681-8100
Videotex Multilink (604) 681-0124

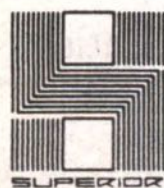
MEDICAL BILLING SHOULDN'T BE A MAJOR OPERATION

REGENT
COMPUTER
SERVICES
OFFER
FLEXIBILITY
AND SELECTION —
TO FIT
YOUR NEEDS

Telenet Medical Billing Network can be compared to the B.C. Systems Corp SIMPC based Teleplan II communications system. But that's not really fair. Although they both provide a similar communications network for medical offices, Telenet is faster and less expensive than Teleplan II, and offers electronic

mail as well. Best of all, Telenet is responsible to the doctors it serves, not to MSP.

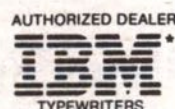
Regent Service Bureau serves the low volume practitioner in the computer age. All billing must be submitted to MSP by computer. In a small office, this can mean a total



SUPERIOR
BUSINESS MACHINES (B.C.) LTD.

John W. McGougan
Representative

1845 FORT ST., VICTORIA, B.C. V8R 1H8 (604) 598-5154
BRANCHES FROM COAST TO COAST



VCB
COMPUTER BILLING

3140 Wascana Street
Victoria, B.C. V9A 1W3

383-8693

R. CASPELL
& ASSOCIATES INC.

BUSINESS CONSULTANTS
7515 - 149A Street, Surrey, B.C. V3S 3H6
Telephone: (604) 597-3110

RANDY CASPELL
PRESIDENT

upheaval. Regent Service Bureau allows the practitioner to submit the billing information to us on paper. We'll computerize it, and print out the reports needed by the doctor and MSP. You get the improved financial and practice reporting of the computer service, with NO capital outlay for hardware!

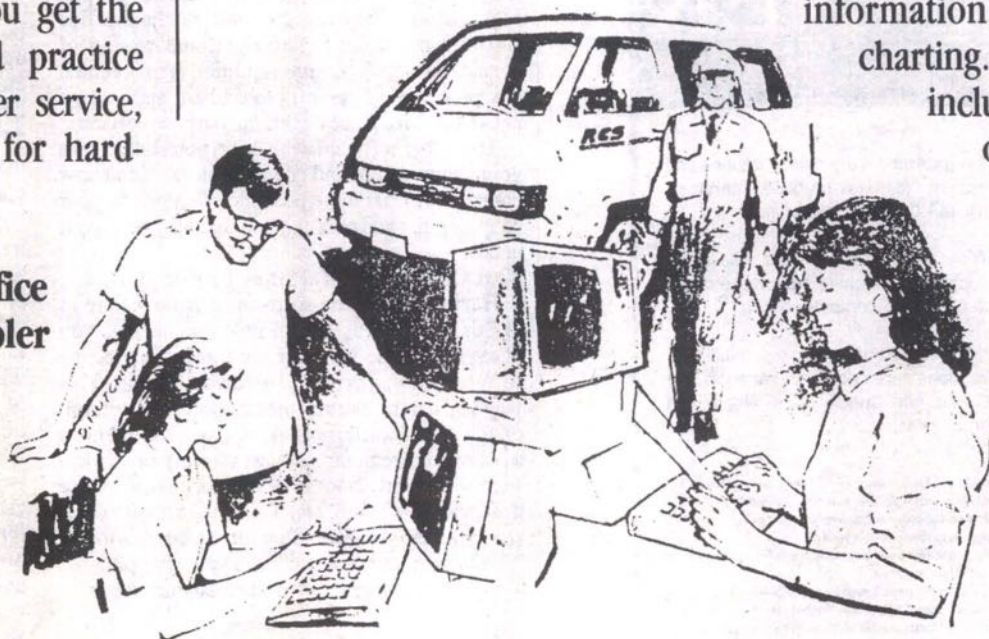
Regent Medical Office Assistance Sampler

allows the practitioner to do their own data entry, but to use the service bureau for electronic transmission of billing data to MSP. You also get access to Telenet, and In-House and Service Bureau Reports. The Regent Sampler requires minimum capital outlay to improve the office's financial and practice reporting, reduce the operating costs, and shorten the cash flow cycle. Regent provides full on-site training in this system as part of the package.

Regent Medical Office Assistance Junior is a complete medical billing and receivables software package. For a low capital outlay, you can reduce operating costs — increase net income! Its full range of functions and reporting options offer the practitioner complete financial information. You'll receive direct billing to MSP, plus accounting

and access to the Telenet Medical Billing Network, and much more. Extensive on-site training is provided, plus 1 year free phone support.

full range of functions and reporting options, plus the training to make it work. This is an outstanding package, for complete access to financial or clinical information including patient charting. Training program includes classroom and on-site training, free phone support for a year, and more.



Regent Computer Services

was the first to provide an on-line electronic billing service in Vancouver. And Regent is still first, with a whole menu of services for medical offices.

Regent Computer Services is the first company to successfully test and submit claims via Teleplan II.

Regent Medical Office Assistance Senior provides the most comprehensive medical billing and medical office management software package available. You'll receive software to fill a

SEE YOUR REGENT DEALER OR
PHONE 1-800-663-2860

REGENT
Health Care Systems Ltd.

Member, Medical Software Vendors Association Software approved by B.C.M.A. Computer Committee

M.D.'S COMPUTER SERVICES

Barbara Milgrom

Authorized Dealer

REGENT COMPUTER SERVICES INC.

3181 Brookridge Dr.
North Vancouver, B.C.
V7R 3A7

Telephone
988-9822

SUBURBAN COMPUTERS

REGENT Authorized Dealer

Medical Billing and Office Management Systems

25340-76th Ave.
Aldergrove, B.C. V0X 1A0

Don Clarke
856-6977
290-8013



GALAXY SERVICES

P.O. Box 179
Chilliwack, B.C.
V2P 6H7

MEDICAL OFFICE SUPPORT/SERVICES

CAROLINE KELLY

792-7525



TELEPLANNER TELEPLANNER



Teleplanner is the most complete and easiest to use practice manager. (BCMA CC approved spec.)

With video training and tele-direct support, it becomes easier and faster to change to computer billing.

MCC **Teleplanner** single or multi-user versions are powerful enough for G.P.'s, and Specialists in single and group practice.

- Bills electronically over the telephone to M.S.P.
- Unattended high security overnight operation via Teleplan.
- General Ledger Accounting and Reporting / Graphing utility
- Prints Audit trail, billings, reconciliations, reports and graphs.
- Detailed printouts of reconciliations (+ M.S.P. rejection codes).
- WCB, out of province, 3rd party automatic billing.
- Complete medical profiles, history, referral, prescriptions etc.
- Pop-up scheduler with variable time slots and extended periods.
- Patient followup with printout for contact and scheduling.
- Day sheets, chart header labels, card labels, printed graphs.

- Easy to use 'Quick menus' for fast entry and printed files.
- Multi-practice/Multi-user works with popular networks.
- Alternate fee code descriptions and fee rates.
- Graph any reports or data desired.
- Uses ICD9, four digit diagnostic codes for more detail.
- Online Help windows.
- MSVA vendor interchange for use with other systems.
- Wordprocessor/DOS/Accpac® interface.
- Doctor to Doctor patient files transfer via telephone.
- Online MSP patient eligibility check.

Call us BEFORE making your decision...

DELTA/SURREY

84th & 120th
8473 - 120th St.
594-5422

Two Locations To Serve You



Leasing and Financing Available
Ask for Corporate Sales

COQUITLAM

Sunwood Square
3025 Lougheed Hwy
520-3076

Teleplan II - Con't From Page 23

ready for step two which is the evaluation of software. When it comes to software there are at least four basic alternatives that can be considered, they are as follows:

- program the system from scratch
- use general purpose software (word processor, data base, spreadsheet)
- buy an Application package "off-the-shelf"
- any combination of the above

Programming a system from scratch is a challenge even for experienced computer people. Many of the currently available medical office software packages are excellent and worthy of consideration. A common solution is to combine the purchase of an off-the-shelf application package with a piece of general purpose software.

To do this software evaluation you should take your shopping list and prioritize it. You can now compare at least three possible solutions to your shopping list and pick the one that best suits your needs.

Next Choose The Machines To Run It

Having picked the software it is now time to evaluate the hardware. I recommend that you always pick the software first and then let the software chosen drive the hardware choice. This way you can be assured that the software will run on the machine chosen. Again, you should have a list of requirements such as; stability of vendor, service support, amount of memory required for the chosen software, etc. Like the software decision you can do the evaluation by comparing at least three possible solutions to your shopping list and picking the one that best suits your needs.



Out With The Old - In With The New

In the last step you should develop an implementation plan which is based upon the software and hardware selections you have made. This plan should include things like how to phase the system in, how to do training, how to get the base data into the system, etc. Having created this plan you can now, if you wish, do a cost benefit analysis which will include the benefits derived in step 1, the cost of software, hardware and implementation in steps 2 through 4. Based on this you can now make an informed business decision.

This process may seem to be long and onerous but over the years it has proven to be a methodology that works for all sizes of organizations and businesses. You need to decide at the beginning how critical the decision is, and then dedicate the amount of time to this process based on your decision.

Can You Justify The Investment?

In this article I have just touched on some of the issues faced by physicians today in doing the business evaluation for a computer system in their own office. Over the past five years we have been teaching courses on computers to physicians through UBC and have found that in our opinion, with the new TELEPLAN II that about 20 - 25% of physicians cannot justify automation of their office on their own, that 20 - 30% would benefit from automated MSP billings and 50 - 60% would benefit from automated patient records. So as you can see, having your own computer system is not for everyone. The ones that cannot justify their own machine or who do not want to automate can utilize a service bureau to transmit their claims. I would recommend that anyone feeling bewildered about the area of automating their medical office should consider enrolling in the Medical Office courses offered by UBC. If you are interested please contact Vicki Ayerbe of UBC at (604) 222-5276.

Ken Robertson is a Director with LGS Data Processing Consultants Inc. LGS is involved in all aspects of Data Processing consulting and has been teaching microcomputers to Physicians through UBC for the past 5 years.

ONE STEP SOFTWARE LTD.

640+ MEDICAL DATA MANAGEMENT SOFTWARE

640+

"YOUR CHOICE TO THE COMPLETE OFFICE MANAGEMENT SYSTEM"

640+ MED has an easy to use style for entry and processing of your Office Data, including automatic PATIENT HISTORY. 640+ MED comes with a FULL Accounts Receivable system that processes MSP claims automatically, as well as, handling all other claim invoices and statements. 640+ MED has COMPLETE REPORT WRITING abilities with many pre-designed Reports already in place. COMPLETELY MENU DRIVEN, Data retrievable by your BROWSE.

**ONE STEP means Service,
Dependability, and Ease.**

For more information phone:

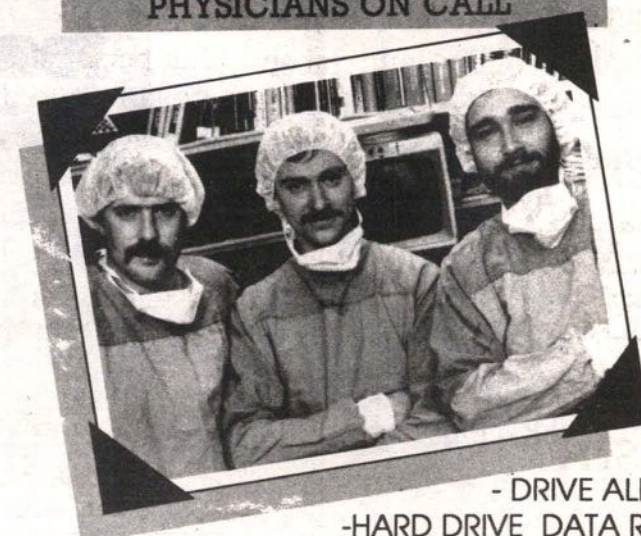
1-699-6558

COMPUTER CLINIC

"The Operative Solution"

"NETWORK SPECIALISTS"

PHYSICIANS ON CALL



- DRIVE ALIGNMENTS
- HARD DRIVE DATA RECOVERY

SALES - SERVICE - RENTALS



SALES - 732-6527 FAX LINE - 732-4427 1675 W. 8th. Ave
SERVICE - 732-4415 TECH BBS - 732-3320 Vancouver

Computer Help Resources

"When you need to know"

Specializing in: LOTUS 123®

Bedford Accounting®
AutoCAD® Training
Word Processing
XENIX /UNIX Services

Re-usable Templates for;
BANKCONTROL©
INVOICECONTROL©
PROJECTCONTROL©

SUPPLYING COST EFFECTIVE AND AFFORDABLE
PROGRAMS, COMPUTERS, TRAINING AND
SUPPORT FOR YOUR BUSINESS NEEDS

Suite 227, 3631 Number 3 Rd.
Richmond B.C.

278-5366

24 HR. - SERVICE LINE 271-1147

Take advantage of our expertise ... FREE !

ComputerLand[®] Learning Centres

We have  and  classrooms located
throughout B.C. and the rest of Canada.

Courses are available for most popular business applications:

Spreadsheets: Lotus 1-2-3; Excel; SuperCalc 4; Smart;
Symphony

Databases: dBase III Plus; Paradox; Smart;
Symphony

WordProcessors: WordPerfect; Word; Smart
DisplayWrite4; MultiMate; Symphony

Operating Systems: DOS; OS/2

Accounting: ACCPAC; Bedford

Networks: User and Supervisor training

Engineering: AutoCAD

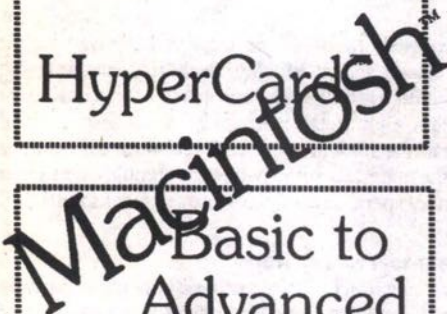
Call us to register: 683-6152

Word™

PageMaker™

FreeHand™

HyperCard™



Basic to
Advanced
Instruction

Vancouver
Locations

886-4502

Folkstone Design Inc.
Since 1984

ERGON WITH THE WIND

Is this an all too apt description of
your office?
Does your workplace suffer from
diminishing productivity?

Our personalized,
solution-oriented, and
knowledgeable approach
can help you choose the
most appropriate products
for your specific needs
from a wide range of
reliable alternatives.

 Ingrid Harris
Dataware

(604) 986-0270

OFFICE AUTOMATION

Accessories & Supplies
Seating & Furniture

COMPUTER TRAINING COURSES

Select from our complete menu of Computer
Training Courses. All training on IBM-Compatible
(except for Pagemaker on the Macintosh).

Free Lunch is included in all Saturday and/or
Sunday Workshops.

BASIC COURSES

Basics of Microcomputers Levels 1 & 2
DOS Levels 1 & 2
Managing Your Hard Disk

DATA APPLICATIONS SERIES

MS-Works - Introduction to
Integrated Software
dBASE III- LEVEL 1, 2 & 3
Lotus Look-Alikes

SHAREWARE SERIES

PCFile+: Flexible Data Base
with Graphics Capabilities
PC-Calc+: Sophisticated Spreadsheet
with Graphics and Macros
PC-Write: Full -featured Word Processor

PUBLISHING COURSES

Microsoft Word Levels 1 & 2
DeskTop Publisher
Introduction to Pagemaker

PROFESSIONAL SERIES

Introduction to Computers for
the Medical Office

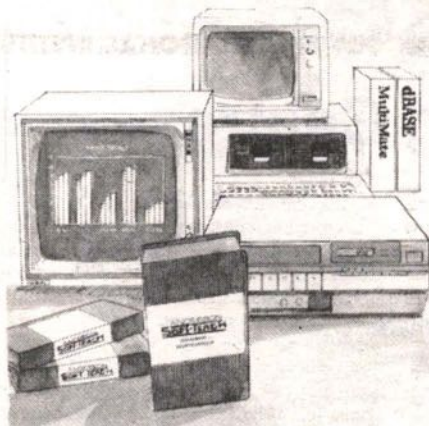
We employ only fully qualified instructors with adult
teaching experience. For days/times/fees send for your
course calendar today.

 capilano
college

Capilano College Extension
2055 Purcell Way,
North Vancouver

984-4901

Q. CAN'T COME TO A CLASS? ...



A. HAVE A CLASS COME TO YOU!

Computer Training Videos

- | | |
|--------------------------------------|---------------------------------------|
| <input type="checkbox"/> MS/PC DOS | <input type="checkbox"/> Word Perfect |
| <input type="checkbox"/> dBase III | <input type="checkbox"/> Multimate |
| <input type="checkbox"/> Lotus 1-2-3 | <input type="checkbox"/> Displaywrite |
| <input type="checkbox"/> Symphony | etc... |

Packages include Video, Disk and Manual

Business Skills Development

- | | |
|--|---|
| <input type="checkbox"/> Sales Training | <input type="checkbox"/> Motivation |
| <input type="checkbox"/> Managerial Techniques | <input type="checkbox"/> Customer Relations |
- ...and many more!

The Video Learning Store

1057 WEST BROADWAY
VANCOUVER, V6H 1E2
732-0015

Sales and Rentals

Take Advantage of the
New Publishing Technology at the

Vancouver Desktop Publishing Centre Ltd

1150 HOMER ST. VANCOUVER V6B 2X6

Professional Training in VENTURA PUBLISHER

Junior & Senior Levels:

Learn the secrets of Desktop
Publishing with professional book
designers.

Or attend one of our **Design Clinics**
for Ventura Users: we will solve your
design and formatting problems on
the spot.

WORKSTATION RENTALS:

Use our low-cost Desktop Workstations
to complete your own publishing
projects. Professional Advisors on hand.

A FULL PUBLISHING SERVICE:

Let our Publishing Professionals take
your book, magazine, newsletter or
report from concept to finished product
— painlessly and inexpensively.

681-9161

A User's Guide to Computer Training Centres

Why The Boom In Training?

"People with years of experience in manual systems, as well as other skills such as accounting, are finding that being able to run a computer is necessary for survival in their industry."

These words by Paul Symchych of the Access Centre sum up a situation in which increasing numbers of businesses are using computers that are running increasingly complex programs. And, as Barbara McKay of McKay Technical Institute adds, employers in a competitive job market generally do not want to hire people who "are willing and able to learn new skills; they feel that they [prospective employees] must already have them." As well, computer users are finding that they are unable to allow themselves the lengthy learning curve involved in learning new programs—or even upgrades—on their own. All these factors have resulted in an increasing demand for computer training.

The Selection of Courses Available Can Be Mind Boggling

Many public and private training institutions and computer retailers have rushed in to fill what is perceived to be a lucrative and fast growing market. Computer training schools are proliferating and the consumer is faced with a bewildering array of courses that vary in length from two or three hours to term-long college sessions. Prices vary considerably from one to another, as does the tax deductibility of the course fees.

How do the courses and the dollar value compare from one to another? As often occurs in growing industries, the quality of the products being offered to the consumer varies markedly from centre to centre. What kinds of laws and certification exist to protect the consumer from overzealous claims. This article looks at some of the questions to ask of potential computer training centres.

Basic Questions To Ask Potential Training Institutes

One possible criterion for choice of a centre may be whether it is a Public Educational Institute, certified and subsidized by the Provincial Government, or whether it is Registered as a Private Training Institute in B.C. According to Ossie Sylvester of the Adult Education and Job Training Branch of the Provincial Government, in order to become Registered, a centre must undergo considerable scrutiny and provide a surety bond. Two notarized letters of evaluation must be submitted from qualified people who are at arms length from the centre. These individuals must agree with the philosophy of the program and feel that it addresses market needs. The centre must also provide a synopsis of their courses and details of instructors qualifications to the Branch. Once registered a centre's courses are tax deductible and, if at least 12 weeks in duration, they are eligible for student loans. Unlike Public Institutions, however, there is no ongoing monitoring of Private Centres. For those interested, the Branch has available, for \$5.00, a list of all Registered Private Training Centres in B.C. You may order this publication by phoning the Branch at 387-6276.

Provincial Registration is Not a Guarantee of Quality

Even among registered centres, however, the kind of training and the amount of personal attention varies. For example, one student interviewed said that the centre she attends uses only printed course material supplied to each student to work through, independently. When a problem arises, she must find the instructor, often a time consuming and frustrating procedure, to get an answer, and then work alone again until the next problem occurs. As a novice user she encounters this procedure frequently. Some centres have a waiting list that students must sign to get the instructor's attention. Others have instructors circulating continually through a small group of students, after giving lectures on relevant material. These differences should alert you, as a prospective student, to the importance of a personal visit to any centres being considered. In this way you can see exactly how the training is carried out, and even talk to current students about their experiences.

Often, registered centres offer what is termed "career counselling", and employ counsellors whose job it is to discuss your wants and needs and match you with the best courses available at their centre. According to one contact who recently worked as a counsellor in the industry, in some centres the counsellor is *required*, "to fill certain classes, to keep enrollment up in less popular courses", in other words to *sell* courses to prospective students based on the centre's needs ahead of, indeed instead of, those of the student. Forewarned is forearmed, so if you find yourself in a situation like the one described, perhaps you should investigate other alternatives.

Let The Buyer Beware

Some people may feel that they are more likely to find the computer expertise they need to learn software programs at the centres that also retail computers and software. Training centre/computer store combinations, however, are not always what they seem. Occasionally complaints surface that some so-called "courses" were in fact extended sales pitches for a particular dealer's product lines, and that in some instances students are high pressured by store sales staff on their way into or out of their training sessions. These negative situations are, on the whole, the exception and many retail store related training centres offer top notch instruction.

Four Local Training Centres Visited

A number of local training centres were surveyed to get an idea of the differences in approach currently available in Vancouver. The chart accompanying this article gives an overview of the course offerings, equipment, software focus, and other details provided by a larger cross section of centres contacted. It is highly recommended that prospective students investigate a number of centres thoroughly, including a personal visit to each of the premises before



Students practice their skills at McKay Institute

making a final course decision.

This may seem like a lot of trouble, and, according to Barbara McKay of the McKay Institute, many people do decide on courses by telephone. Consider that, however, in taking a course, be it for one day or for three months, you are investing not only your money, but hours of your most valuable resources: time and energy.

Who and What Do You Teach?

In order to narrow down the focus of enquiry a number of basic questions were posed, beginning with: "What market does your centre address?" "What are your areas of specialty?" In answering these questions Paul Symchych of the Access Centre said that all their courses are IBM related and address the needs of both novices and experienced users. Over one half of the Access Centre's students "are complete novices, one quarter feel they should know how to operate a computer, and one quarter *have* to know in order to remain competitive with other job seekers who do". Fraser Martin, of The Computer Place, said that their programmes address the IBM world only, and they serve mostly the downtown corporate client. They plan to address the computerized medical office vertical market this fall. To these questions Anne Tessla, of Pitman Business College, replied that their diploma programmes are IBM focused and that their Computerized Accounting programme requires students to possess a strong accounting background. Barbara McKay of McKay Technical Institute said that their Computerized Bookkeeping and Desktop Publishing courses offer IBM, Macintosh, and IMS micro-computer options and attract a variety of students, "from those just out of high school to mature students who want to familiarize themselves with the computerized office environment".

How Long Are The Courses?

Course duration forms another area of enquiry. This is an important concern because, generally speaking, short courses are intense, and require high energy. They work best for students who go directly back to a situation in which they will be using their new knowledge on a daily basis, so as to retain as much of their new knowledge as possible. Longer courses offer more time to practise and retain new skills as well as providing an opportunity to interact with an instructor and other students. They require more commitment, however, since classes continue for several weeks or months and usually are more expensive.

Fraser Martin describes The Computer Place's courses as "one or two day intensive courses," to allow students to "focus completely on the course with no outside concerns whatsoever." For example, they offer, among others, courses for difficult upgrades, such as WordPerfect 5.01. According to Fraser, "This course is only for version 4.2 users who are thoroughly familiar with that program." At Pitman Business College and at McKay Technical Institute, the courses are generally three months long and cover a wide variety of topics. At the Access Centre the course is, according to Paul Symchych, "as long as the student needs to feel comfortable that he or she has mastered the material. Some people fly through in a matter of hours and others may spend several days or even weeks until they are satisfied".

What Is The Student-to-Teacher Ratio?

Another important question is, "What is the student:teacher ratio in the class?" At The Computer Place the answer is a maximum of 9:1, each student being provided with his/her own computer. Each computer is connected to that of the instructor, so that the instructor can monitor each student's screen, and each student can easily switch between his/her own screen and that of the instructor. At the Access Centre, the answer to this question is, in a sense, 1:1, since "all training is computer based and operates concurrently with the actual software". Students work with a proprietary interactive video/computer program combination at their own pace, with the opportunity to move back and forth at will from the interactive tutorial (that monitors each of the student's keystrokes to facilitate the learning process) to the "live" program, where they can practise their new skills on their own personal projects. Pitman's ratio is a maximum of 8:1 in the computer environment and McKay Technical Institute allows a maximum of 16 students to each instructor. Although the student to instructor ratio can be a big factor, but it is important to remember that, just as in high school, a great teacher can more than compensate for larger numbers of students.

What Kind of Computers are used? Macintosh or MS-DOS

Another pertinent question concerns the computer operating environments being used. Currently most institutions are teaching either MS-DOS or Macintosh based courses. UNIX and OS/2 courses will likely become more common, but currently they are the

exception.

MS-DOS-based centres outnumber the others by a high margin, due to the large installed base of those systems and the low-priced clones available; but, in considering an investment in your future, serious research and thought should be given to current trends in the business market. Although it is the case that computer systems bear some basic resemblances, it is also true that commands and strategies between operating systems vary widely, so it is by no means necessary that, because you have learned to operate one type, learning another will be easy. In many cases the deciding factor will be what your working environment demands.

Recently the training drought for Macintosh computers has been abated by course offerings from Computerland downtown, Advantage Computers and Folkstone Designs. This Macintosh training has been slow in coming partially due to Apple's own marketing approach which maintains that the Mac is so easy no one should require training. The illusion of this myth is evident to anyone opening some of the more advanced Mac programs such as Illustrator, PageMaker, Word, or even the new Macintosh System software.

Is The Course Tax Deductible?

Instructor qualification as well as tax deductibility are two further issues to investigate. The Computer Place, according to Fraser, "finds some of their instructors through CCI, (Computer Consulting Institute 463-5066) a body that supplies instructors for Continuing Education courses for the Vancouver School Board", and also employs a consulting lawyer and a UBC instructor for some of their courses. The tutorials used at the Access Centre were developed using Evergreen Technology Corporation's *Concurrent Authoring System*. Both Pitman Business College and McKay Technical Institute have tax deductible, diploma courses and qualified instructors.

Will the Course Get Me a Job?

Many students are concerned about the marketability of their new skills, so job placement help and employer acceptance is also an important issue. Pitman Business College claims an "83% employment record within 60 days of graduation", and offers their students a course in job search and interview role playing as part of their diploma programme. McKay Technical Institute also offers students job placement aid. According to Barbara McKay, "often there are more positions available than students to fill them". Taking calls from prospective employers and matching their needs with course offerings is just part of what the centre is doing. Desktop Publishing Course from Simon Fraser on real-world projects for actual clients and Barbara feels this gives their students a realistic sense of the kind of work they will actually be doing when they complete their course. This also gives the clients, "who are often prospective employers", a chance to meet with students.

How Good is The Equipment?

If the computers at the training centres do not have enough memory, programs may run agonizingly slowly, hang up for long periods, or just bomb repeatedly, causing lost data and user frustration. Here again, it is advisable to do some prior research, read some articles and reviews, find out what the optimum system requirements are for the programs you wish to learn. Then, when you investigate prospective training centres, you will be in a position to know whether their systems are adequate to your purpose. If their prices are lower, perhaps there is a good reason.

The type and number of printers is also of major concern to students. Laser printers for DTP work and, in all cases sufficient numbers of printers, however, are minimum requirements; otherwise, productivity may be hampered.

After the Course is Over

Finally, the notion of "after-course support" should be considered. This is especially important after the short, intensive courses. Some estimates suggest that up to 40% of what was learned will be forgotten in a relatively short period, due to the fact that most students will not use many of the new procedures on a daily basis. A support-line for course participants would obviously be the ideal situation. On the other hand, the student should be willing to pay a higher price at a centre offering this kind of service. Many centres do offer detailed course-books and other handouts to help the student during and after the course, but a manual rarely solves the real world types of problems faced by new graduates.

The "Look and Feel" of The Classroom

The classroom environment should not be left out either. Comfortable working spaces with proper lighting, seating, glare protected monitors, and adequate work space can make the difference between full, focussed attention leading to quick learning and, at the other extreme, a distracted mind caused by an uncomfortable, cramped body hampering the ability to learn effectively.

WYTYSINAWY

In summary, many centres offer what appear, at first glance, to be the same or very similar courses, even on exactly the same software packages, at very similar prices. In reality, however, there are enough really significant differences among various centres to warrant your taking time to investigate several (by means of a personal visit, if at all possible) before making your choice. In the case of training centres, What You Think You See (in the ads) Is Not Always What You Get.

Ingrid Harris is a Queen's University graduate and President of Ingrid Harris Dataware, supplier of computer-related products to the corporate environment.

There Must Be 50 Ways To Learn Computers...

Colleges, Universities and Technical Schools

In addition to the computer specific training centres discussed, the community colleges and school boards usually offer evening computer courses. Simon Fraser, BCIT and UBC all have Continuing Studies departments as well as their full time programs for computer learning. Again these very somewhat in quality. It is recommended that you inquire into the student-teacher ratio, student-computer ratio, the quality of equipment used in teaching and credentials of the instructor. (see the Computer Calendar for listings)

Videos and Books

Other approaches to computer learning are more independently guided programs. There are a number of video courses available including The Video Professor Series available at a number of local retail stores or from Masako Holdings. These video cassettes cover both basic and advanced level instruction on such programs as Ventura, Lotus, WordPerfect as well as MS-DOS. They are priced at just over \$100 each. The advantage of this approach is that they can be viewed at the leisure of the learner, and are always immediately available for refreshers. The Video Learning Store on West Broadway in Vancouver rents computer course videos. According to store owner John MacCarthy, they have a selection of video tapes on a variety of popular computer programs. It is possible to rent for about \$10/day or buy these videos.

For those who like to read to learn, there is a veritable cascade of computer books currently flooding the market place. (See the Bookseller's Bestseller's List page 39)

Contract Training

The idea with personalized training is to hire an instructor to come in and train you or your personnel on your own systems. An obvious advantage to this approach is a course very customized to your individual needs. Costs can be higher if the teaching is one on one, but are often similar in a group training situation. Many of the training schools around town offer corporate training on a contract basis. This approach also means that businesses can get very specific training for their employees. Update Training Service and Professional Training Associates are two downtown companies specializing in this approach to contract training.

Consultants

Consultants are often a good source of one-to-one instruction. For example: Rolf Drommer from Harbinger Services gives courses in Project Management, Barry Shell of Softshell will teach Macintosh Excel or Hypercard, Bob Chisholm of Horizon Systems will train small businesses on the use of Bedford Accounting and Gene Wirchenko of Clear Thought Software can help you get a handle on DOS.

Whatever your training requirements, with the boom in computer training, there is a probably a training company which can meet your needs.



VANCOUVER VOCATIONAL INSTITUTE

ACCOUNTING

Junior accountant

In this micro-computing based program students will journalize, record, post, and analyze business transactions using an integrated accounting software package to create financial business statements. Students will use LOTUS 1-2-3, create data base files using DBASEIII+ and use word processing for business applications. Also included are the principles of business law, and accounting theory. The preparation of payrolls applying Federal and Provincial legislation is included.

Micro-computers in Accounting:

Designed for those with an accounting background who would like to receive practical "hands on" computer training in state-of-the-art software for MS Word, Bedford Integrated Accounting, LOTUS 1-2-3 and DBASE III+.

Computer Programmer:

This entry-level program offers data processing theory and computer languages: COBOL, C-LANGUAGE, DBASE III+, Data Communication and networking. Also covered are technical report writing, structured design, accounting theory and data base concepts for micro-computer applications.

Transportation

Traffic, Customs and Transportation: For those interested in a career in transportation and related fields, this program includes brokerage, forwarding, distribution, transportation rules and regulations, as well as micro-computer courses.

Secretarial

Microcomputers for Secretaries:

This program is designed to provide a higher technological skill level for experienced secretaries from a traditional office environment. Graduates may obtain employment specializing in secretarial applications on microcomputers.

Secretary:

This program is designed to provide to teach students to translate a wide variety of business documents, take shorthand to 80 w.a.m.; perform a variety of business secretarial assignments/ determine work priorities; revise and process business correspondence and documents using word processing equipment, input, store and retrieve data using a computer terminal and/or personal computer.

Word Processing:

Graduates of this program will have acquired the knowledge and skills to use effective communication techniques when writing various forms of business correspondence from simple memoranda to more complex reports; organize work, complete projects in final form using word processing equipment; operate both a shared logic (Wang System 25) and stand-alone IBM display-writer of AES+ word processing system.

Administrative secretary: Office management and high technology office skills are stressed in these advanced program, with special emphasis on supervisory techniques and administrative procedures.



VANCOUVER COMMUNITY COLLEGE
Counselling Department
250 W. Pender Street, Vancouver B.C. V6B 1S9

Ph. 681-8111 - local 220

COMPUTER TRAINING

Hands on training Set your own pace
Set your own schedule Start any time

INTRO TO COMPUTERS
BASIC OPERATING SKILLS

BUSINESS COMPUTER SKILLS

Word Processing Data Bases
Financial Spreadsheets

Instructor - led Workshops Available

the ACCESS CENTER
..... at Lonsdale Quay

THE COMPUTER TRAINING SPECIALISTS

(at the Seabus)

North Vancouver

984-4671

Hours: Mon. - Thurs. 1-9pm.

Fri. & Sat. 1-4 pm.



**VANCOUVER
COMMUNITY
COLLEGE**

Continuing
Education Division

**hands-on computer skills
training for business
and the professions**

Courses include

desktop publishing
word processing

Lotus 123
ACCPAC
Bedford
dBase III+

Precept

Computer Skills Learning Centre

For information or our
FREE course schedule
call us today!

255-3198

FREE Subscription to

COMPUTER PAPER

Just fill in this questionnaire.

1) Rate the articles you read on a scale
of 1 to 10 (10=good, 1=poor)

Newsbytes _____ Computer Calendar _____

New Products _____ Bestsellers List _____

The Shareware Shelf: DOS Tutors _____

Teleplan II Medical Software _____ A User's

Guide to Training Centres _____ Easy Steps

to Good Design _____ Expert Systems _____

Virus Watchers _____ MacWorld Report _____

Bedspread Review _____ Illustrator 88 _____

Getting Listed on the VSE _____

14) Where did you pick up your copy
of the paper? be specific:

15) What would you like to see more of
in the paper?

16) Type of Computer & Operating
System: Home Computer: _____

Home Operating System: _____

Work Computer: _____

Work Operating System: _____

Name: _____

Title: _____

Business Name: _____

Address: _____

Postal Code: _____

Mail To: The Computer Paper
3205 W. 13th Ave.
Vancouver, B.C. V6K 2V6

September 1988 Offer good til Jan 1, 1989

Easy Steps to Good Design

Help for The Beginning Desktop Publisher

Whenever I do something for the first time, I like to have clear, easy steps to follow. This is especially important when there is very little time to accomplish the task.

For example, in the last two days of my holiday this summer, my friend purchased a kneeboard—an alternative to waterskis. A kneeboard is a very buoyant, short board, rather like a dwarf surf board. We had seen people using these, but had no idea how to use it ourselves. We did have two days however, and there were four of us to puzzle this out. At the end of day one, my brother-in-law figured out the method—mostly by trial, error, and a high tolerance for water up the nose. He then clearly described to the rest of us what steps were needed to get up on the kneeboard as the boat was pulling us through the water. Those clearly described steps had each of us kneeboarding on our first try the next day.

This same need for clear steps to good design is apparent in the desktop publishing environment. Few of us have the time to spend two to four years in College or University learning how to design. I am grateful my design training was completed before the advent of desktop publishing as the time spent to keep abreast of software and hardware changes is considerable.

The means to creating good design is more important now than ever, with the newer means of production. It's important because good design means well-organized material that gets the message across. We don't have time to get interested in every piece of paper that crosses our desk. We need the message to be clear and self-evident. The key to creating good design lies in proper training (years of it ideally) and practice.

Few Good Design Books Available

For those people using desktop publishing equipment without the benefit of layout and design training, good resource books are the solution. Unfortunately, most design books are vague, at best, in their description of how to achieve an effective layout. Two recently published books, directed towards the desktop publishing environment, are reasonably good sources of design methods: *Looking Good in Print* (©1988) by Roger C. Parker, and *Design for Desktop Publishing* (©1987) by John Miles.

There are also two excellent resource books available that are standards in the Graphic Design community and have been used in Universities and Colleges for quite some time: *Designing With Type* by James Craig, and *Production for the Graphic Designer* by James Craig.

I teach an intensive Desktop Publishing/Graphic Arts course at McKay Technical Institute and am always on the lookout for a really good design text. In my search, I have been repeatedly disappointed. Either a book looks great and says little or nothing, or it is unattractive in design but offers more information (the first two resources mentioned follow this rule). In my opinion, a book on design methods should be attractive and informative.

The more I search, the more I consider putting together a book of my own methods, techniques, and rules. I have discovered through teaching that one of the best ways for people to learn about design quickly is to give them rules, tips and clear-cut guidelines to follow. They may not grasp the design value of the method initially, but use, practice and success will make it crystal clear.

I would like to show you two techniques that I consider basic to successful design. One of these I've called the "packaging" technique. The other is called the "power of space".

Packaging

Take a simple 4"x 5" ad. Untrained Designers will produce the following:

You & Me Professional Hair Stylists

- haircuts
- permanents
- tints
- streaks
- skin care
- make-up artistry
- nail art

Call **542-8663**
to be your best!

*Note: equal space between
lines creates eleven equally
important pieces, making it
hard to decide what to look at
first.*

Observe the dramatic difference when applying the "packaging" technique:

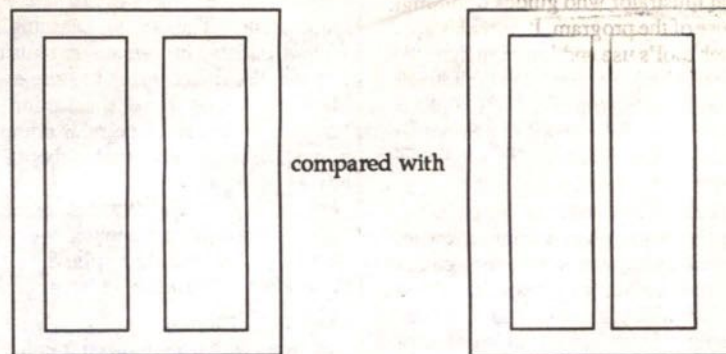


The way to apply this technique is as follows:

1. Identify information elements that work together within an ad
For example: a) You & Me with Professional Hair Stylists
b) the list of things they do
c) their phone number and slogan
2. Position these closer together—with more space around each group
3. Try to make the reader see only a few "packaged" elements instead of many

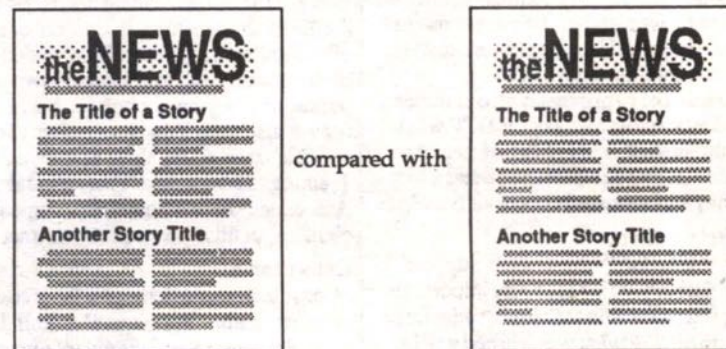
Power of Space

The second technique, the "power of space" is different but still related to "packaging". Unusual as it may seem, space is not only an element of design, but the most powerful element of design (hence the name "power of space"). By controlling space in a design, you control the message of the design, its impact, organization, and communicability. Observe the following simple illustrations:



compared with

Your eye is drawn into the page by the grouped effect of the photos—two items giving the illusion of only one thing to look at. Now let's look at another example:



compared with

Combined, these two techniques are very powerful. You create the packaging technique by using space, but you can rely on graphic techniques (gray backgrounds, boxes, lines etc.) to help. Unfortunately, without understanding why, people frequently package by using boxes, lines, etc.—and still forget to manipulate space in the process.

Easy steps to design are the way to bypass trial and error, and can often become a more efficient means to the same end. I can't help but think that there should have been a set of instructions included with that kneeboard. We could have been enjoying it for an extra day...and more than likely we are still not doing it quite right anyway. Keep that in mind while you produce your very first newsletter without design training.

Mary Kletchko has a Bachelor of Fine Arts in Graphic Design and teaches Desktop Publishing/Graphic Arts at McKay Technical Institute

Illustrator 88—Computer Art Comes of Age

Every now and then a product or a tool comes along with capabilities unparalleled in the marketplace. For me, it's Illustrator 88. This most exciting program can create graduated scales, sophisticated type manipulation, automatically trace images, produce clipping paths and more. Much more... In two month's use, I've barely scratched the surface of this computer program's capabilities.

What is Illustrator 88?

Developed by Adobe Systems Inc., Illustrator has been on the market for about one and a half years and runs on the Apple Macintosh. This high-quality graphic design tool's first incarnation was complex and designed to be used mostly by graphic illustrators.

The new version, Illustrator 88, is clearly designed with a broader audience in mind. Though the interface hasn't changed, tools such as autotrace and transform are extremely easy to use and quite sophisticated.

System Requirements

On a Mac SE with 1024 K of RAM running Finder 6.0 and System 4.2, this two-disk program operates with 283 K of free memory (working space). Install anything which inflates the System such as a Tops Network and Illustrator 88 simply won't run. This program is definitely aimed at higher end systems with "gobs" of RAM. And though it will work on a floppy disk drive, hard drives are highly recommended.

Support Materials

One of the first things you will notice about the Illustrator 88 program compared to its previous incarnation is that it has gained quite a bit in presentation. Material design and layout is excellent. All original art materials were created with the program. Support materials include a Video, a Quick Reference Card, a User Guide, a Training Manual and a Colour Guide. The Colour Guide includes a complete process colour map which was originally created with Illustrator 88.

Illustrator was the first program to come complete with a video introducing the program and its uses. The original version's video starred John Warnock, Adobe Systems President and co-author of PostScript. Though it was quite useful to view, it was by no means a videomatic masterpiece. The new video is much more refined. (John Warnock fans will be disappointed because he doesn't even make an appearance.) This time the star is an actual illustrator who guides us through the every day use of the program. It provides good coverage of each tool's use and function though it seems that several video sections were accelerated while demonstrating Illustrator's more sophisticated functions. This can be rather deceptive because it leads the audience to believe the program operates faster than it actually does.

The Quick Reference Card is quite useful and well designed. It covers all the information required to operate Illustrator 88. It is easy to use and has both written and graphic descriptions of tool uses. It also includes hints on how to best use each tool. The blend tool, for example, has an excellent hint which clearly improves its use. Users can actually begin working with Illustrator 88 armed only with the Video and the Quick Reference Card.

The User Guide is replete with valuable operation information. It begins with a description of the program's environmental requirements. It also gives a complete list of supported printers. It does have some inconsistencies (what do they mean by a Mac SE with "either" a hard drive?), but it is mostly direct and to the point. It contains one of the best descriptions I have seen of the two types of computer graphics:

"When you scan an image, or when you use MacPaint to create an image, the image is defined by the arrangement of dots (pixels) on the screen. When you create artwork with the Adobe Illustrator 88 program, you create an image which consists not of dots but a collection of lines and curves, each of which has its own mathematical definition. It is this ability to translate images into mathematical constructs that makes it possible for this program to create high-quality artwork."

—User Guide

This quote captures the nature of computer graphics for desktop publishing in a nutshell.

Here's how it works

Illustrator 88 is really a graphically-oriented programming tool. We use circle, pen, square, and

Illustrator 88 Art:

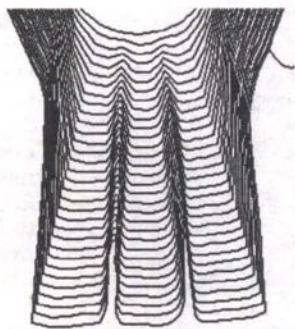


Figure 1: The lower tail section of the image shows the multiple layers created by Illustrator 88's blend tool. It is seen here in Artwork Only mode.

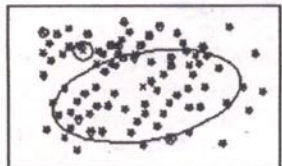
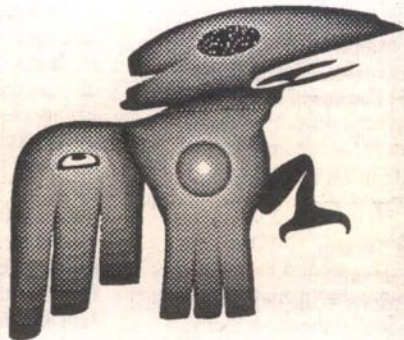


Figure 2: Clipping paths are created in Illustrator 88 by placing the clipping object (in this case an oval) behind the objects to be clipped. The clipping object must be ungrouped and filled with the Mask option in the paint dialogue box.



The original artwork for this image was created by Northwest Coast Indian artist Niel Smith. It was scanned into MacPaint format and used as a template for the illustration seen here. Blends were added afterwards to demonstrate Illustrator 88's more sophisticated features.

other tools to create complex information which the program translates into PostScript language constructs. Users never need see a line of code (though knowing some PostScript can add to the effects created within the program) and yet produce quite sophisticated illustrations.

The program's work area is a page composed of 1008 by 1008 points (14 by 14 inches) divided into nine pages. Only page 5 is whole; other pages are portions of the work area.

The program always works in outline mode, creating see-through images. This allows for the use of templates which can either be created in different programs such as MacPaint or can be scanned into one of Illustrator's supported template formats. Templates always open in the centre of the working area. But since the page origin can be relocated with the page tool, users need not worry about creating the image directly in the center of the working area. And believe me, moving the page origin takes much less time than moving the artwork.

There are four basic views within the program:

- Artwork only—an interactive view in outline only,
- Template only—a non-interactive view of your template,
- Artwork & Template—usually the operational mode,
- Preview Illustration—a non-interactive view of what the artwork looks like.

This last view is actually a PostScript preview and since the Macintosh does yet not support display Postscript, it remains non-interactive. An interesting feature is New View. This lets you use two views of the same image at the same time. One

can be left in Artwork mode while the other is in Preview. Changes made on the artwork are automatically reflected in the Preview window.

Tool Description

Illustrator has an excellent selection of tools. Of course, there are the usual array of tools that you would expect in any drawing program such as box, pens, circle, item selector, hand, text, and so forth. What makes Illustrator unique is that it contains two types of tools. Object creation tools such as the ones listed above and object manipulation tools: i.e., scale, rotate, shear and reflect.

Illustrator 88's new tools turn an already sophisticated program into a sheer pleasure to use. These include freehand, autotrace, blend, and measure.

The freehand tool finally lets you draw in freehand style with Illustrator. Dragging this tool around the page will create a series of points and bezier curves along the path drawn. Experienced users will note the freehand/pen tool toggle (Control key on SE and IIs) allowing for quick switches between tools to create straight and other lines without going to the toolbox.

Autotrace is a dream come true. You simply click on a template with the tool to get an automatically-created outline of the object. The image included here took 2.5 hours to create in its original form with Illustrator 1.1. In Illustrator 88, I created a better image with a much higher degree of complexity in only one hour.

Blend is also a fabulous addition. Simply click on the link points of two ungrouped objects with the blend tool to make a dialogue box appear. Set the number of intervening steps and let the program do the work for you.

Graduated grey scales are now very simple to produce. Simply draw a white box and a black box some distance from each other, ungroup the objects, select them and blend them in 98 steps. (A lot simpler than creating 100 boxes and assign 100 different grey values to each...) A hint to use this tool is to select the same number of points within each object to be blended before transforming them. Results will be better than when only one point is selected in each object. Another idea is to create additional points (with the scissors) on certain objects when blending oddly-shaped objects.

The Option key is of utmost importance in Illustrator 88. Most tools can be used as is, but when used in conjunction with the Option key, a dialogue box appears giving you precise control over the operation. For example, selecting an object then pressing the option key while clicking on the Item Selector will display a "move" dialogue box allowing the precise movement of objects. Each "Option" dialogue box gives you the option to either change the original object or to change a copy of the object. For example, to create a falling object in ten steps, you would create it, select it, use the rotation tool while pressing the Option key, give the rotation increment for the first step and rotate a copy of the object. Once this is done, use Transform Again from the Options Menu until all other steps have been created. This program is replete with such features.

Disappointments

A major disappointment of Illustrator 88 is the Text dialogue box. It hasn't been improved. This means that users are limited to 255 characters in each text block. Kerning is also limited to global control which makes it tedious to create well-kerned words. Creating a full page of kerned text in 88 can be somewhat of a chore...

Another limitation is the memory requirement. Users will find themselves continually saving to clear operational memory. Sometimes this can be so bad that you actually have to quit the program and restart it to free memory. The only solution is to add more memory. With these flaws taken into consideration, the program has abundant uses.

Illustrator 88 is here to stay and once again appears to the market leader in its field. If sophisticated graphics is what you want, this is the program for you.

Nelson Ruest is an independent Desktop Publishing consultant. His publishing experience spans several years and includes operation of both Macintosh and PC layout programs. He can be reached through RESOLUTIONS at 683-1599.

IS THERE ONE SOURCE
IN CANADA FOR LAPTOP
COMPUTER HARDWARE,
SOFTWARE, ACCESSORIES?

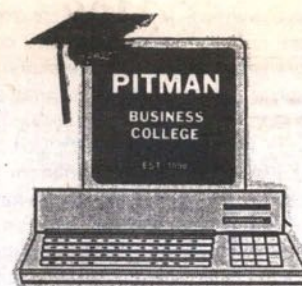


Yes!

Canada
Portable
Computer

3620-244 Street
Langley, B.C. V3A 4P6
Telephone: 1-800-663-1061
Vancouver Area: 534-6441

Phone or write today for
free information kit.



Train For a Career:

- Secretarial
- Accounting
- Computerized Accounting
ACCPAC-IBM
LOTUS 1-2-3
- Word Processing
WANG, AES, MICOM, IBM

Pitman Offers More:

- Accredited School
- Expert Instructors
- Modern Equipment
- Latest Software
- Diploma Programs
- Upgrading Programs
- Student Loans
- Job Placement

Foreign Students - Pitman offers specially designed Secretarial and Accounting Programs for Foreign Students. Full E.S.L. Program.

Choose the best when you
choose your business college

CALL 738-7848

1490 W Broadway, Vancouver

The Expert System Bonus: Using AI to Train People

Is Artificial Intelligence Research Pointless?

There was an article in the New York Times last month concerned with artificial intelligence. It was written by a philosopher and in the article he discusses the viability of AI research. The philosopher asserted that work in artificial intelligence is pointless since it is impossible to manufacture a machine that could completely imitate all facets of the human brain. He's right. And he's wrong. Consider this analogy:

For All Intents and Purposes

At a party at UBC, a mathematics student and an engineering student were talking with a professor. Across the room, an attractive woman was sitting at the bar and, the three of them having noticed her, the professor said - "If you could go half the distance between you and that woman, and then go half the remaining distance again and again, how long would it take you to reach her?" The mathematics student was the first to respond - "Oh, that's easy! You would never get there since there would always be half the distance to go." At this point, the engineer offered his opinion - "That may be true," he said, "but I'll get close enough for all my intents and purposes."

I like the engineer's approach. The philosopher in the Times is right in saying that such a machine could not be built. But he's wrong in saying that AI research is pointless. We do not have to mimic the human brain entirely to develop applications based on AI principles. There are many well-defined areas of human expertise that can be modeled by useful and practical AI systems. Our efforts to build an expert system for the telephone company fall in that domain.

Not Enough Experts to Go Around

Experts are a valuable resource in any company. More often than not, there are not enough experts in a company to completely satisfy the demands for their expertise. In the fall of 1987, a Canadian telephone company made the decision to develop a computer system modeled on the expertise required by test desk personnel.

Telephone Company Implements AI System

Test desk personnel are responsible for analyzing trouble faults (problems) on telephone lines. Once the test desk personnel have determined the cause of a trouble, they assign the task of fixing the problem to one of several departments in the telephone company. For example, if a test desk person analyzes a fault and determines its cause is due to a bad cable, they would dispatch the trouble to be fixed by the cable maintenance crew.

The test desk person has 3 databases (containing hundreds of data fields) and one software tool that they use to analyze a problem on the telephone line. Synthesizing that much information into knowledge for decision-making is not easy and, as a result, analyzing troubles is a complicated process. If the test desk dispatches the trouble to the wrong department, the trouble will eventually return to the test desk unresolved - a very costly error. The telephone company's goal for handling telephone line troubles is ambitious. They want to detect the trouble, analyze it, dispatch it, and then repair it before you even notice a problem with your telephone. And, by and large, they can do this with well-trained test desk personnel.

Since the success of the telephone company's strategy for resolving trouble faults depends greatly on having well-trained test desk personnel, the system we developed is a training system. Its goal is to provide the test desk trainee with the strategies, knowledge and experience of expert test desk personnel. The system was named Test Desk Decision Support Tool.

Test Desk Decision Support Tool (DST)

There were several aspects about the telephone company's problem that indicated it was a good candidate for a knowledge-based solution. The test desk problem falls in the category of diagnosis. Many successful diagnostic systems have already been built using the knowledge-based approach. A detailed task analysis of the job skills necessary for the test desk person had been completed and was well documented. Once a trouble had been analyzed, everyone



Telephone workers using the expert system

agreed on how that trouble should be dispatched. Experts were available and willing to assist in building the knowledge base. And, all the pertinent data for 100 trouble fault case studies had been gathered and were available to us.

Looking at the task of analyzing trouble faults, it is apparent that the problem is procedural in nature. A decision tree diagram could be compiled that would show every step and every question a test desk person would need to consider. However, for this problem the diagram is large enough that implementing it with a traditional algorithmic programming language (like Pascal or C) would be impractical. Not only would the nesting of control structures become unwieldy, but it would be very difficult to modify or enhance the system.

It was decided that a knowledge-based approach would be applied and, further to that, a commercially available expert system shell would be used to implement the system. The use of an expert system shell can dramatically shorten development time. For this project, the LEVEL 5 expert system shell from Information Builders, Inc. was selected. The development team consisted of telephone company test desk experts, a knowledge engineer, an instructional designer, and programmers.

Components of A Knowledge-Based System

A knowledge-based system has 4 components:

- 1) A user interface which asks questions to the user and obtains the user's responses.
- 2) A knowledge base which contains the facts, rules, and questions for the system.
- 3) Working memory where facts are stored.
- 4) An inference engine that controls the knowledge base.

To transform a knowledge-based system into a training system like Test Desk DST, you need to add one more component - the training interface. The training interface provides a variety of learner evaluation and tracking functions.

Test Desk DST approaches the task of training test desk personnel by presenting the learner with case studies based on actual telephone line faults. To accomplish this, a group of support programs had to be written around the knowledge base to round out the training system.

Pulling It All Together

To implement Test Desk DST, we developed an initial prototype and continued to refine it to the final system. This method is particularly suited to the development of knowledge-based systems for several reasons. Since we had not worked with the LEVEL 5 shell before, it was important that we found its limitations as soon as possible. The first prototype was ready in two months. It was useful in demonstrating to the knowledge experts the capabilities the system would have. It also showed the experts the kind of knowledge we required of them to develop the full knowledge base. Additionally, the prototype identified areas of our system design that needed to be re-worked to accommodate the special limitations of the LEVEL 5 shell.

There is no fail-safe and easy way to transfer knowledge from experts. At best, we can say it is an iterative process. For this project, the process of building the knowledge base involved several steps:

The test desk experts were interviewed about their test desk experience.

The knowledge engineer translated the interview results into rules for the LEVEL 5 knowledge base.

The knowledge engineer and the test desk experts sat down together using case studies to validate the knowledge base against their expertise.

The knowledge engineer revised the knowledge base to correct any errors and include new knowledge.

The whole process was repeated several times - each time resulting in a more accurate and reliable knowledge base.

The incremental approach worked surprisingly well. In the first session of knowledge extraction with the experts, we instructed them to tell us the general steps they would follow for most trouble faults. We estimate that we were able to create a knowledge base that

handled over 80 percent of trouble faults correctly upon completion of these initial interviews.

Pushing that percentage closer to 100 by validating the knowledge base required the most amount of time spent on the project. This step was crucial to producing an effective system. It is essential that the knowledge base be as complete and accurate as possible. To realize the goal of 100 percent precision, the knowledge engineer and the experts repeated the process of comparing the knowledge base's solution for a case study with the expert's solution. When errors were found, new rules were formed for handling the exceptional case study. Moreover, we found that the experts don't always realize the strategies they employ to resolve a problem and by using an incremental validation approach, they were able to identify their strategies easier.

The Bonus

The learner finds several advantages in the knowledge-based training system. First, the trainees have an "expert-in-a-box" guiding them through the analysis and advising them what to do or consider next. Second, whenever the system asks them for information, the trainees can ask "Why?" and the system will explain why the requested information is necessary for solving the problem. Third, when the solution is reached, the trainees can see the exact line of reasoning the expert used to solve the problem.

The telephone company also found several advantages to developing the Test Desk Decision Support Tool as a training program. First, the knowledge base has been created and can be used virtually without change in an operational knowledge-based system. The knowledge base is the same for deciding how to dispatch troubles whether the troubles are gathered for training or operational purposes. The real time databases and line testing program can be linked to the program instead of the simulated systems we used for training. Second, by building the knowledge base for training, you can do a thorough validation of the rules in a safe training environment. All the bugs in the system will get worked out before they can do any damage in the operational system.

The Test Desk Decision Support Tool was a good application for an expert system. It fit neatly into a well-defined problem set that lends itself easily to knowledge-based modeling. It is impossible to dismiss the growing impact of expert systems in corporations today. Eighty percent of the Fortune 500 companies are involved in developing expert systems. Arthur D. Little Management Consultants in its report titled "Forecast on AI Products" (1983) predicted that the dollar volume in expert systems will rise to \$3-12 billion by 1990 and \$50-120 billion by the year 2000. It is perhaps the fastest growing area in computer technology today. It is not too soon now to think of using a knowledge-based system to solve corporate problems. Building these systems first as training tools can provide a clean and sensible development path to an operational system.

Expert Words

AI - (artificial intelligence) An area of computer science research whose goal is to produce computer systems that behave in ways humans recognize as 'intelligent'.

Expert System - A computer system that can perform a task at or near the level of a human expert. Also called knowledge-based systems.

Expert System Shell - A software tool that simplifies the development of expert systems by providing several components of expert systems in one package, usually the user interface, inference engine, and memory management modules.

Inference Engine - The component of an expert system that is responsible for manipulating the knowledge base to solve a problem.

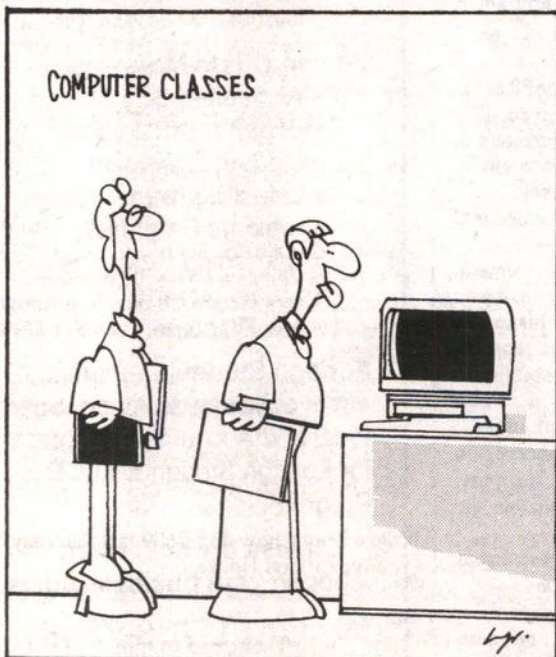
Interface - The component of a computer system that communicates with the user.

Knowledge Acquisition - The process of locating, collecting, and refining knowledge gained from human experts.

Knowledge Base - The component of an expert system that consists of the facts and heuristics about a domain. The knowledge is often recorded in the form of examples, facts, rules, or objects.

Knowledge Engineer - An individual whose specialty is assessing problems, acquiring knowledge, and building knowledge-based systems.

Prototype - In expert systems development, a prototype is an initial functioning version of the system that is built to test the effectiveness of the overall knowledge representation and inference strategies of the system.



COME COME, MR. BRAVERMAN ...

By Marie Burlinson. As an educator and business person with over 25 years experience, Ms. Burlinson has a special understanding of training goals in business. Her own company, RJM Computer Systems Ltd, was established in 1978 and is a leader in computer-delivered training solutions. RJM Computer Systems uses its proprietary authoring system and job aid system to implement custom training solutions for a diverse range of corporate clients. Ms. Burlinson holds a Master's degree in Computer Science from The Johns Hopkins University. She can be reached at RJM Computer Systems Ltd, 301 - 1190 Melville Street Vancouver, B.C., Canada V6E 3W1 (604) 681-5251

ACCOUNTING

ACCESS CENTRE 290 - 145 Chadwick, North Van 984-4671
Bedford Accounting Sept. 7,8,9 **\$180**
 BARKEL BUS.SCHOOL, 211 - 3030 Lincoln Ave.Coquitlam
 464-8717. Call for night school start dates.
Bedford Accounting or ACCPAC **\$80**
 BURNABY CAREER CENTRE, Metrotown Mall, Burnaby,
 437-5711.
 ACCPAC, Lotus, Call for details day and evening
 BUSINESS CENTRE, Ste. 300, 1497 Marine Drive, W. Van.
 925-1147. Call for dates. New Views **\$149**
 COMPUTERLAND LEARNING CENTRE 1035 W. Pender
 683-6152. Call for starting dates.
 ACCPAC GL or Bedford **\$180**
 COMPUTER EMPIRE TRAINING CENTRE 4162 Main 872-
 1668 New Views Accounting Call for dates **\$145**
 COMPUTER PLACE 860 Burrard St, 688-2992
 ACCPAC G/L Sept 8 **\$179**
 ACCPAC A/P Sept 22 **\$179**
 DOUGLAS COLLEGE Info 520-5479 Register: 520-5472
 NewViews Accounting Seminar Call for dates **Free**
 DOPPLER'S TRAINING CENTRE 101 W. 5th 875-0261
 Bedford Accounting or ACCPAC full day courses **\$175**
 KWANTLEN COLLEGE, P.O. Box 9030, Surrey, B.C. 588-
 4411. ACCPAC Intro. Sept. 29-Oct. 20 **\$120**
 McKAY TECHNICAL INSTITUTE 2151 Burrard St. Vanc.
 736-7221 Computerized Bookkeeping Course 12 weeks
 PERSONAL COMPUTER TRAINING INSTITUTE
 200-247 Abbot St Downtown 682-5448 12 hour courses
 ACCPAC or Bedford Accounting CALL **\$150**
 PITMAN BUS. COLLEGE 1490 W. Broadway 738-7848
 Computer Accounting Call for start dates
 PRECEPT COMPUTER CENTER 735 Clark Dr, 255-3198
 Intro to Bedford Accounting Sep 13, 15, Oct 27 **\$130**
 Accounting with Bedford Sep 20 **\$225**
 Intro to ACCPAC Sep 12, Oct 17 **\$130**
 ACCPAC G/L Sep 26, Oct 18, 31 **\$145**
 ACCPAC AR/AP Sep 29 **\$275**
 PRIMA TRAINING CENTER 207-3900 E Hastings, Burnaby,
 294-4567 Using ACCPAC-Easy **\$150**
 TXL MANAGEMENT SYSTEMS Holiday Inn on Broadway.
 New Views 9-12 am Sept. 15 **Free**
 VANCOUVER COMMUNITY COLLEGE 875-2800
 Bedford Accounting Sept. 21 **\$175**
 Accounting Using ACCPAC Sept. 10,19 **\$165**
 Intro to Bedford Sept. 6,17,21 **\$145**
 ACCPAC A/R & A/P Sept. 22, **\$145**
 VANCOUVER SCHOOL BOARD 736-7241
 Vancouver Technical, 2600 E. Broadway
 ACCPAC-GL or Bedford Accounting 5 sessions **\$90**
 VAN. SOFTWARE CENTRE 300-1190 Melville 669-9800
 Call for starting dates.Bedford Sept. 14,27 **\$180**

DATABASE

ACCESS CENTRE Lonsdale Quay 984-4671
 dBase III + Start anytime, computer based training-selfpaced
 tutorials (average 20 hrs, no max.) **\$140**
 BARKEL BUSINESS SCHOOL 211-3030 Lincoln
 Ave.,Coquitlam 464-8717. Call for night school start
 dates.dBase III+ **\$80**
 BURNABY SCHOOL BOARD, 5325 Kincaid St., Burnaby,
 V5G 1W2 299-4361. dBaseIII+ Lev. I Sept. 20,21 **\$80**
 CAPILANO COLLEGE 2055 Purcell Way, North Van 984-4901
 dBase II-Level 1,2&3 (package \$185) Sep 19 **\$75**
 Shareware Series: PC-File Sep 16/17 **\$125**
 COMPUTERLAND LEARNING CENTRE 1035 W. Pender
 683-6152, Call for starting dates.
 Intro to dBase III + or dBase III + Intermed. **\$180**
 COMPUTER PEOPLE LEARNING CENTRE, 302A 1124
 Lonsdale Ave. N. Van. 984-4349dBASE III + Intro, Inter.**\$139**
 COMPUTER STATION 2130 Burrard St, Vancouver 732-8621
 Intro to dBase III +, Sept. 14 **\$180**
 DOPPLER'S TRAINING CENTRE 101 W. 5th 875-0261
 dBase III+ Intro or dBase III+ Programming **\$175**
 DRAKE COMPUTER TRAINING 100-1111 Melville St 669-
 8789
 Symphony Database Sept. 30 **\$175**
 Introduction to dBase III Plus Sept. 13 **\$175**
 Intermediate dBase III Plus Sept. 15 **\$175**
 Introduction to dBase III Plus Sept. 28 **\$175**
 Introduction to dBase II Plus Eve. Sept. 27 **\$175**
 FIALA, BONNER 810-1112 W Pender 684-1022
 dBase III + 1 Sept. 21 **\$175**
 MICROAGE LEARNING CENTRE 3609 W 16th Ave, 222-
 1010 Call for starting dates. dBase III + Part I & 2 **\$175**
 PCTI (PERSONAL COMPUTER TRAINING INSTITUTE)
 200-247 Abbot St Downtown 682-5448 12 hour courses
 Call for starting dates.Reflex Plus **\$150**
 PBSC TRAINING CENTRE 1350-1140 W. Pender 689-7272
 dBase III + 1 Sept. 6,20 **\$175**
 dBase III + 2 Sept. 14 **\$175**
 dBase III + 3 Sept. 21 **\$175**
 PITMAN BUS. COLLEGE 1490 W. Broadway 738-7848

dBase III + Call for start dates
 PROFESSIONAL TRAINING ASSOC., 502-1185 W. Georgia
 681-5903 DBase III+ Level II Sept. 1 **\$175**
 VANCOUVER COMMUNITY COLLEGE 875-8200
 Intro to dBase III + Sept. 14,21 **\$145**
 Intermed. dBase III + Sept. 27 **\$145**
 Advanced dBase III + Sept. 14 **\$145**
 dBase III dBase III + Sept. 22 **\$175**
 Database Using Clipper **\$150**
 VAN.SOFTWARE CENTRE 300-1190 Melville 669-9800
 Call for starting dates.
 Introduction to dBase III +, Sept. 12, 27 **\$180**
 dBase III + Intermed., Sept. 9, 20 **\$180**

CAD/CAM/CASE

BURNABY SCHOOL BOARD, 5325 Kincaid St., Burnaby V5G
 1W2. 299-4361.
 AutoCAD Oct. 17 **\$160**
 KWANTLEN COLLEGE, P.O. Box 9030, Surrey, B.C. 588-
 4411.Computer Aided Drafting Sept.26-Nov. 21 **\$300**
 MICROAGE LEARNING CENTRE 3609 West 16th Ave, 222-
 1010. Call for starting dates.
 Autocad, Customizing Autocad **\$175**
 UBC CENTRE FOR CONT. EDUC., CASE: Computer Assisted
 Software Engineering, 3 day seminar, Sept. 12,13,14, Ramada
 Renaissance Hotel, 1733 Comox Street, Vancouver, B.C.

DESKTOP PUBLISHING

(See also the Macintosh Section for Mac DTP)
 CAPILANO COLLEGE 2055 Purcell Way, North Van 984-4901
 Intro to Pagemaker Oct 2,16,23 **\$125**
 DOPPLER TRAINING CENTRE 101 W. 5th, Van. 875-0261
 Ventura or Pagemaker **\$375**
 FIALA BONNER, Ste. 810-1112 W. Pender 684-1022
 Ventura 1 Sept. 7
 McKAY TECHNICAL INSTITUTE 2151 Burrard St, Vanc. 736-
 7221 Call for details
 Desktop Publishing/Graphic Arts 12 weeks
 MICROAGE LEARNING CENTRE 3609 W 16th Ave, 222-
 1010. Call for starting dates.
 Pagemaker **\$175**
 PBSC TRAINING CENTRE 1350-1140 W. Pender 689-7272
 Pagemaker 1 Sept. 6-8 **\$450**
 PRECEPT LEARNING CENTRE 735 Clark Dr 255-3198
 Intro to Desktop Publishing Sep 19, Oct 13 **\$130**
 DTP with Ventura Sept 29, Oct 24 **\$190**
 DTP with PageMaker Sep 26, Oct 20 **\$190**
 PRIMA TRAINING CENTER 207 - 3900 E. Hastings St.
 Burnaby 294-4567
 DTP using Ventura Call for dates **\$150**
 DTP using Pagemaker **\$150**
 SELKIRK COLLEGE, Box 1200 Castlegar V1N 3J1 365-7292
 Electronic Publishing, Graphic Design, Photography,
 Writing, 1 year program.
 SIMON FRASER UNIVERSITY Downtown 687-4255
 DTP - Ventura, Alternative Approaches
 A Day With Ventura Publisher Oct. 19 **\$175**
 DTP Power with Aldus Pagemaker Oct. 22 **\$175**
 Design+Print Production for DTP Oct15-Dec10 **\$300**
 VANCOUVER COMMUNITY COLLEGE,
 PageMaker for the IBM Sept. 1,23 **\$165**
 PageMaker for the IBM Inter. Sept. 8,29 **\$165**
 PageMaker for the IBM Newsletter Sept. 16 **\$130**
 VANCOUVER ELECTRONIC PUBLISHING ASSOC
 P.O. Box 24776, Vancouver, 875-0677
 SEYBOLD DESKTOP PUBLISHING CONFERENCE Santa
 Clara, Calif. Sept.15-17, VEPA package tour to Seybold rates
 from \$426. Call Gail at Amica Travel 683-7727
 General Meeting Sept. 6, 7 PM at the BC Club in the
 Enterprise Centre, 750 Pacific Blvd S **Free**
 VEPA Monthly Meeting Commodore & QMS ProductDem-
 onstrations 875-0677.
 Mac SIG (Nelson Ruest) 683-1599 2nd Wed of the month,
 meetings at Computerland, 1035 W. Pender **Free**
 Intro to DTP Sept. 27th \$25 for members. **\$50**
 Page Layout Seminar Sept. 22nd \$50 for members **\$80**
 DTP & Type Seminar Sept. 28 \$50 for members **\$80**
 Design Vancouver: The Colour of Black a competition &
 exhibition of the best of Vancouver's Electronic Publishing.
 Entry deadline Sept 30, Show Oct 21-30 224-6152
 VANCOUVER COMMUNITY COLLEGE 875-8200
 Intro to DTP **\$130**
 VANCOUVER DESKTOP PUBLISHING CENTRE Ltd
 1150 Homer St 681-9161 Steve Osborne, Roedy Green
 Desktop Design Clinics **\$69**
 VANCOUVER DESKTOP PUBLISHING CENTRE Ltd
 1150 Homer St 681-9161, Stephen Osborne, Roedy Green
 Ventura Publisher Call for dates **\$129**
 VANCOUVER SCHOOL BOARD 736-7241
 John Oliver School, 530 E. 41 Ave
 DTP: Ventura or Pagemaker **\$135**
 VAN.SOFTWARE CENTRE 300-1190 Melville St. 669-9800

Call for starting dates.

PageMaker, Ventura Call for dates
 Introduction to Ventura Sept. 6,7
 Advanced Ventura Sept. 9
 Introduction to Pagemaker Sept. 19,20
 Advanced Pagemaker Sept. 23

CONVENTIONS AND COMPUTER SHOWS

DIGITAL CONSULTING INC. 6 Windsor St. Andover, MA
 01810, (617) 470-3870. National Database & 4th/5th Genera-
 tion Language Symposium in Toronto, Sept. 26-28, 1988.
 THE CONSUMER'S COMPUTER SHOW '88 Oct 22&23,
 Westcom Promotions PNE Grounds, New and used computers,
 seminars call for booths and tables 436-2677 **\$5**
 PACIFIC COAST COMPUTER FAIR & SWAP MEET, Oct.
 1, 1988, 10-4 pm, McPherson Centre, 7325 McPherson Ave.,
 Burnaby, B.C. 270-0064. Table rental \$35 User group displays,
 door prizes.
 PACIFIC RIM COMPUTER & COMMUNICATION
 SHOW November 1,2,3,1988, Vancouver Trade and Convention
 Centre. Call for details 433-9549 or 433-5121. Sales: Helen
 Levasseur
 Canadian Business Telecommunications Alliance Telecon '88,
 Sept. 18-22. Canada's largest telecommunications conference and
 trade exposition, Telecon '88 - Winning Through Telecommuni-
 cations. 5-days. Contact CBTA 416-865-9993.

GENERAL INTEREST

R.L. CRAIN INC., "Bar Code Seminar" officially announcing
 opening of Bar Code Sales Office in Vancouver. Tuesday, Sept.
 20, 9:30 a.m. or 1:30 p.m. Refreshments will be served. Le
 Meridien Hotel, Salon Versailles, 845 Burrard St. Vancouver,
 B.C. R.S.V.P. April Hamilton 874-1131.

THE MEDICAL OFFICE

CAPILANO COLLEGE 2065 Purcell Way North Van 984-4901
 Intro to Computers for The Medical Office
 Oct 12/16, Dec 3/4 **\$140**
 MEDICAL SOFTWARE USER GROUP Kevin Brawley 736-
 5039 \$35/year membership:
 Medical Software Exhibition Exhibition of Teleplan billing
 systems for doctors. **\$5**

USER GROUPS

Amiga User Group Meetings (PaNorAmA), BCIT, Rm 129A
 General Meetings 2nd Wed each month 7:30 pm
 Programmers: 4th Wed each month 7:30 pm
 Apples BC Computer Society Call Lorne 467-6062.
 Apple II User Group Meeting BC Apple Society, Burnaby
 Rugby Club, Kiyo Masuda 437-9935
 Apple III SIG Monthly Kiyo Masuda 437-9935
 Beaver Valley Commodore Club Meets first Tues every month
 at Montrose School Library. Call John Vink 367-6426 B.C. Unix
 User's Group meets 4 times a year. Call George Pajari 925-
 2555, 2545 Queens Ave, West Van V7V 2Y9.
 Clipper Developers Association 1st Mon SFU 873-0747
 Commodore Club 1st Tues Sunset Comm Centre 738-3311
 Forth Interest Group Speakers and Tutorials on Forth hardware,
 software and applications. Meetings: 7:30 first Thurs of each
 month, BCIT main bldg, 3700 Willingdon Rm. 1A-324
 Kaypro User Group Vancouver Portable Computer Club 3rd
 Monday at Kaypro in Richmond (CP/M) 278-5776
 Mac User Group Meeting BC Apple Society, WCB Building,
 6951 Westminster Hwy (Kiyo Masuda) 437-9935.
 Mainland Mac Sept. 14, Mouse Stick Demo, MacRecorder.
 New User Meeting Sept. 21st. Rm 115 Kwantlen College,
 Surrey, 574-3813, Ron Haidenger.
 Maple Ridge Computer User Group 467-2647 M.R. Sr.
 Secondary School 7:30 PM, **Free**
 NEC APC Users Group Bi-monthly Lee 980-5825
 North American Amstrad User's Group. For newsletter,
 membership application send S. A. S.E. to: 65-13880 - 74th Ave,
 Surrey V3W 7E6 PHONE: 597-0881 R. Scott
 Novell Netware Users Peter Whitelaw 669-8789 monthly
 Port Coquitlam Computer Users Group Commodore Amiga &
 IBM 1st and 3rd Tuesday each month 7:30 pm, Poco Rec Centre
 2100 Wilson Ave 942-4286
 Software B.C. General Meetings are 3rd Thursday of every
 month in Vancouver, #400 - 1190 Melville St., Vancouver, 684-
 7432.
 Tandy 1000+ Club Meeting Second Monday 7:00 pm at
 Kwantlen College, Newton Campus, Rm 209 or 211. Call Len
 Boscoe 574-5419
 The New Apple Alliance May Chow 435-7609 last Saturday of
 month in Kitsilano Neighbourhood House.
 TI Computer Club Central Richmond. Meets 2nd Wed of each
 month. Phone Keith at 261-2739
 Trace (Richmond Atari Club) Thompson Comm. Centre Linus
 Lane Richmond, 272-5789 1st & 2nd Monday 7:30-9:30
 Vancouver Netware User's Group Les Lebbant 275-2829.

Meets 1st Mon of the month.

Vancouver PC Users Group Planetarium 438-6009, \$20/year membership. 7:00 pm 2nd Thurs

Vantari 34-3046 Coast Meridian, Pt. Coquitlam B.C. Judy Hercus 873-1941 Hastings Comm. Ctr 3096 E Hastings, 7:30-10:30 pm XL/XE & ST

Wang System User Association 736-8841 ext 227 J.P. Doiron 99 Users Group Meets every Thursday 7-10 p.m. at Cameron Rec Centre, Burnaby. Call Ron at 522-2598. 1st Thurs Games, 2nd Thurs General 3rd Thurs Tutorials 4th Thurs Copying Prog.

INTEGRATED SOFTWARE

DRAKE COMPUTER TRAINING 100-1111 Melville 669-8789
Symphony Database Sept. 30 \$175
Symphony Spreadsheet Sept. 22 \$175
Smart Spreadsheet Day 1 Sept. 27 \$175
Smart Spreadsheet Day 2 Sept. 28 \$175

PBSC TRAINING CENTRE 1140 W. Pender, 689-7272

Symphony 1 Sept. 7 \$175
Symphony 2 Sept. 19 \$175
Symphony 3 Sept. 27 \$175
Framework II 1 Sept. 13 \$175

VANCOUVER SCHOOL BOARD 736-7241

dBase III + Call for dates \$90

VAN. SOFTWARE CENTRE 300-1190 Melville 669-9800

Call for starting dates.

Introduction to Framework, Sept. 1,16,26 \$180
Framework II, - Inter. Sept. 19 \$180

LOCAL AREA NETWORKS

DRAKE COMPUTER TRAINING 100-1111 Melville 669-8789
Novell System Manager Sept. 20,21 \$415

INDEPENDENT TECHNOLOGY SERVICE 265 - 167 W. 2nd Ave. 873-3900.

Network Training on site- Customer's convenience.

\$250 3 hr/1 person \$400 6 hr/1 person

MACINTOSH

ADVANTAGE COMPUTERS Suite 1760 505 Burrard St.

MACS A.M. 8:30 - 12:00 a.m.; P.M. 1:00 - 4:30 p.m.

Intro to Mac, Intermed Mac, PageMaker

Microsoft Works, Word, Excel, Hypercard COMPUTER-
LAND LEARNING CENTRE 1035 W. Pender 683-6152. Call
for starting dates.

Pagemaker, Excel, Macintosh Basic Skills, Word

FOLKSTONE DESIGN INC. Box 44, Grantham's Landing, B.C.
VON 1X0 986-8060 or 886-4502

MicroSoft Word, Pagemaker, Excel

PROGRAMMING & DEVELOPMENT

BCIT Full Time 432-8419, Part Time: 434-1610

Assembler I (IBM Mainframe), Assembler II (IBM
Mainframe) 6 wks Assembler (IBM PC) I 6 wks Basic (IBM
PC) 1 6 wks Basic I 6 wks Cobol-Level I 6 wks Cobol-Level
II 6 wks Pascal 6 wks PL/I Level I 6 wks

BURNABY SCHOOL BOARD 299-4361.

Micro Processing II BASIC Intro Oct. 26 \$48

Data Proc. 2: BASIC Oct. 26 \$65

COMPUCOLLEGE Vancouver 682-6600, Burnaby
435 2424, Richmond 273-0373. Call for starting dates. 480 hours
full time diploma courses:

Computer Programming & Systems Analysis

Microcomputer Electronic Technology

COMPUTER STATION, 2130 Burrard St. 732-8621.

Intro to Microcomputers Sept. 7,22 \$180

SFU Continuing Studies Program (Applied Sciences) 291-3844

Design Analog Integrated Circuits Oct 12-14 \$350

Superconductive Materials Oct 20 (video conf.) \$105

Interdisciplinary World of Computing Oct 4 \$105

Photonic Switching in Comm.&Comp. Sep 22 \$105

UBC Centre for Cont. Education. Courses held at Microcomputer
Lab, Old Bookstore, UBC.

BASICS of Programming Intro Sept.19-Oct. 31 \$185

Programming in C: Intro Sept. 22-Oct. 27 \$195

CS 5079-488 Sept.14-Nov. 2 Sept. 24 \$250

VANCOUVER COMMUNITY COLLEGE

Intro. to Computers Sept. 1,6,12,19 \$145

SPREADSHEETS

ACCESS CENTRE Lonsdale Quay (N. Van Seabus Entrance)
984-4671. Start anytime, computer based training-self paced
tutorials Spreadsheets: Lotus 123 (Av. 20 hours) \$140

BARCEL BUSINESS SCHOOL 211-3030 Lincoln Ave.

Coquitlam 464-8717. Call for night school Lotus123 \$80

BCIT Full Time Registration 432-8419, Part Time: 434-1610

Business Applications (Lotus) 6 wks \$167

BURNABY SCHOOL BOARD, 5325 Kincaid St., Burnaby V5G

1W2 299-4361.Lotus 1-2-3 Sept. 20,21 \$80

CAPILANO COLLEGE 2055 Purcell Way, North Van 984-4901

Lotus Look Alikes Oct 1,15 \$105

Shareware Series: PC Calc Sept 23,24 \$125

COMPUCOLLEGE Vancouver 682-6600, Burnaby 435-2424,
Richmond 273-0373. Call for starting dates. 480 hours full time
diploma course: Microcomputer business applications
THE COMPUTER PLACE 860 Burrard, 688-2992

Lotus 123 Level I Sept 6, 20 \$179

Lotus 123 Level II Sept 15, 29 \$179

COMPUTER PEOPLE 302A 1124 Lonsdale N. Van. 984-4349

Lotus 123 Adv. \$139

COMPUTERLAND LEARNING CENTRE 1035 W. Pender

683-6152. Call for starting dates.

Lotus 123 Intro, Intermed or Advanced \$180

COMPUTER STATION

2130 Burrard St, Vancouver, Pat Austin 732-8621

Introduction to Lotus 123 Sept. 13,27 \$180

Intermediate Lotus 123 Sept. 15 \$180

Advanced Lotus 123 Sept. 15 \$180

DOPPLER 101 W. 5th, Vancouver 875-0261,

Lotus 123 Intro or Advanced \$175

DRAKE COMPUTER TRAINING 100-1111 Melville 669-8789

Advanced Lotus 1-2-3 Sept. 12 \$175

Introduction to Lotus 1-2-3 Eve. Sept. 20 \$175

Introduction to Lotus 1-2-3 Eve. Sept. 21 \$175

Introduction to Lotus 1-2-3 Sept. 6,14,30 \$175

Advanced Lotus 1-2-3 Sept. 12,29 \$175

Introduction to Lotus 1-2-3 Sept. 22 \$175

Lotus Macros Sept. 7 \$175

FIALA, BONNER 810-1112 W Pender Vancouver, 684-1022,

Lotus 123 1 Sept. 19 \$175

Lotus 123 2 Sept. 13 \$175

Lotus 1-2-3 Level 1 Sept. 29 \$175

Lotus 1-2-3 Level II Sept. 23 \$175

IPC SYSTEMS, 228 W. 7th, 873-5595

Lotus 123 Basics Sept. 13 \$150

MICROAGE LEARNING CENTRE 3609 W 16th Ave, 222-

1010. Call for starting dates. Lotus 123 \$175

PBSC TRAINING CENTRE 1350-1140 W. Pender 689-7272

Lotus 123 1 Sept. 2, 21 \$175

Lotus 123 2 Sept. 20 \$175

Lotus 123 (Macros) Sept. 16 \$175

Lotus 123 (Functions) Sept. 28 \$175

Lotus for Executives Sept. 24 \$175

Supercalc IV 1 Sept. 8 \$175

Supercalc IV 2 Sept. 30 \$175

Smart 1 Sept. 9 \$175

Excel 1 Sept. 23 \$175

PERSONAL COMPUTER TRAINING INSTITUTE

200-247 Abbot St Van. 682-5448 12 hour courses

Lotus 123 II or Lotus 123 Macros \$150

PITMAN BUS. COLLEGE 1490 W. Broadway 738-7848

Integrated Software - Lotus 123 Call for start dates

PRECEPT LEARNING CENTER 735 Clark Dr. 255-3198

Electronic Spreadsheets Oct 27/28 \$145

PRIMA TRAINING CENTER 207-3900 E Hastings, 294-4567

Using Lotus 123 Call for dates \$150

Lotus Data Management & Graphs \$105

PROFESSIONAL TRAINING ASSOC., 502-1185 W. Georgia,

681-5903.

Displaywrite 4 Sept. 22-23 \$350

Lotus Level I Sept. 13 \$175

Lotus Level II Sept. 14 \$175

Lotus Level II Sept. 15 \$175

UBC Centre for Cont. Education, Courses held at Microcomputer

Lab, Old Bookstore, UBC.Lotus 1-2-3 Sept. 21-Oct. 12 \$195

VANCOUVER COMMUNITY COLLEGE 875-8200

Intro to Lotus 123 Sept. 15,17,21, \$145

Using Lotus 123 Sept. 19 \$175

Intermed. Lotus 1-2-3 Sept. 9,29 \$145

Advanced Lotus 1-2-3 Sept. 16 \$145

VANCOUVER SCHOOL BOARD 736-7241 Vancouver

Technical, 2600 E. Broadway Lotus 123 Call for start dates \$90

VAN. SOFTWARE CENTRE 300-1190 Melville 669-9800

Call for starting dates.

Introduction to Lotus 123, Sept. 1,16 \$180

Lotus Intermed. Sept. 9,22 \$180

TELECOMMUNICATIONS

PBSC TRAINING CENTRE 1350-1140 W. Pender St 689-7272

Crosstalk (call for starting dates) \$175

USING YOUR PC

ACCESS CENTRE Lonsdale Quay 984-4671

Basic Operating Skills Start anytime, computer based train-

ing-self paced tutorials (average 12 hrs, no max.) \$125

BARCEL BUSINESS SCHOOL 211-3030 Lincoln Ave,

Coquitlam 464-8717. Call for start dates.MS DOS Tutorial \$45

BCIT Full Time Registration 432-8419, Part Time: 434-1610

Computers in Business, Computer Systems-Intro I,

Computer Systems-Intro II 6 wks \$139

BURNABY SCHOOL BOARD, 5325 Kincaid St., Burnaby B.C.

VtG 1W2 299-4361.

Micro Processing 1 Sept. 21,22 4 sess. \$32

MS DOS/IBM Sept. 20, 21 \$75

Computerese Nov. 5

CAPILANO COLLEGE 2055 Purcell Way, North Van 984-4901

Basics of Micros Lev.1&2 Start:Sep 12,14,15, \$185

DOS Levels 1&2 Oct 8,22 \$105

Managing Your Hard Disk Nov 12 \$105

COMPUTERLAND 1035 W. Pender 683-6152.

Intro to Micros or DOS \$180

COMPUTER PLACE 860 Burrard St, 299-3003

MS/PC-DOS Sept 1, 28 \$179

COMPUTER PEOPLE LEARNING CENTRE, 302A 1124

Lonsdale Ave. N. Van. 984-4349

MS-DOS ESSENTIALS Call for dates \$89

MS-DOS HARD DISK MAN. \$89

COMPUTER STATION 2130 Burrard Vancouver 732-8621

Intro to Micros & DOS \$160

Intro to DOS \$115

DRAKE COMPUTER TRAINING 100-1111 Melville 669-8789

Intro to DOS (Eve.) Sept. 6 \$125

Advanced DOS Sept. 26 \$125

Introduction to DOS Sept. 8 \$125

Introduction to DOS Sept. 19 \$125

Introduction to DOS Sept. 29 \$125

DOPPLER 101 W. 5th, Vancouver 875-0261

Intro: Micros & DOS Every Mon thru Sept \$175

FIALA, BONNER 810-1112 W Pender St. 684-1022

Introduction to Computers Sept. 16 \$175

Parent/Child Sept. 3 \$175

Introduction to Computers Sept. 17 \$175

DOS 1 & 2 Sept. 1 \$175

DOS 1 & 2 Sept. 30 \$175

KWANTLEN COLLEGE Surrey, B.C. 588-4411.

Intro to Computers Sept. 26-Nov. 21 \$75

Intro to Computers & DOS Sept. 26-Nov. 21 \$75

Sept. 28-Nov. 16, Sept. 30-Nov. 25 \$75

Managing Your Hard Disk Sept. 24 \$35

MICROAGE 3609 W 16th Ave, 222-1010 Call for starting dates.

Intro to PCs/DOS, Advanced DOS \$175

PBSC TRAINING CENTRE 1350-1140 W. Pender 689-7272

Intro to PC Sept. 13 \$175

DOS 1 & 2 Sept. 1,10,12,19,29 \$175

Advanced DOS Sept. 9 \$175

PCTI, 200-247 Abbot St Van. 682-5448 12 hour courses

Intro to IBM-PC and popular software \$150

PITMAN BUS.COLLEGE 1490 W. Broadway 738-7848

Intro to Business Software, Orientation MS-DOS

PRECEPT LEARNING CENTRE 735 Clark Dr 255-3198

Intro to PCs Sep 12,15,Oct 3,13 \$145

Harnessing the Power of DOS I Sep 22, Oct 17 \$145

Harnessing the Power of DOS II Oct 6 \$145

PRIMA TRAINING CENTER 207-3900 E. Hastings, Vancou-

ver, 294-4567. Call for times.

Intro to Microcomputers \$105

Getting to Know your PC Hardware \$105

PROFESSIONAL TRAINING ASSOC., 502-1185 W. Georgia,

681-5903.Intro to PCs and DOS Sept. 6,12,19,26 \$175

UBC Centre for Continuing Education

Courses held at Microcomputer Lab, Old Bookstore

MS-DOS: A Beginner's Guide Call for dates \$65

MS-DOS: An Advanced Workshop \$65

Keyboard Skills Sept. 17 \$50

Learning about Microcomputers Sept. 24,25 \$185

VANCOUVER COMMUNITY COLLEGE 875-8200

Intro. to Computing Concepts Sept. 19,20,21 \$175

VANCOUVER SCHOOL BOARD 736-7241

John Oliver, Vancouver Technical

Intro IBM PC Call for dates \$90

VAN. SOFTWARE CENTRE 300-1190 Melville 669-9800

Call for starting dates.

DOS Orientation, Sept. 6,21 \$180

VANCOUVER DESKTOP PUBLISHING CENTRE Ltd

1150 Homer St 681-9161, Stephen Osborne, Roedy Green

Introduction MSDOS Call for dates \$119

Taking Command of MSDOS \$69

T

Word: Intro, Intermediate & Advanced (each)	\$169	Multimate Advantage II 2 Sept. 23	\$175
WordPerfect Intro, Inter., Adv. (each)	\$169	Multimate Advantage II 3 Sept. 29	\$175
COMPUTER PLACE 860 Burrard St, 688-2992		WordPerfect 1 Sept. 7,20,30	\$175
MS Word Sept 12	\$179	WordPerfect 2 Sept. 13,22	\$175
WordPerfect Level I Sept 13,23,27	\$179	WordPerfect 3 Sept. 26	\$175
WordPerfect Level II Sept 15, 29	\$179	PERSONAL COMPUTER TRAINING INSTITUTE	
WordPerfect + DOS Sept 14	\$179	200-247 Abbot St Van. 682-5448 12 hour courses	
COMPUTER STATION 2130 Burrard St, Vancouver, Pat Austin		Multi-Mate, MS Word 4.0, WordPerfect 4.2	\$150
732-8621 Call for start dates. WordPerfect, Word, MultiMate,		Typing Tutor IV	\$75
DisplayWrite 4, Sept. 9,14,23,	\$180	PITMAN BUS. COLLEGE 1490 W. Broadway 738-7848.	
DOPPLER 101 W. 5th, Vancouver, 875-0261, call for times		Word Processing - Concepts & Theories; Applications;	
WordPerfect, Word, Multimate, DisplayWrite	\$175	Production; Advanced	
FIALA, BONNER 810-1112 W Pender St. Vancouver, 684-1022		PRECEPT LEARNING CENTRE 735 Clark Dr 255-3198	
Multimate Advantage 1 Sept. 6	\$175	Wordperfect Module 1 Sep 19,26, Oct 6	\$145
Multimate Advantage 1 Sept. 22	\$175	Wordperfect Module 2 Oct 20	\$145
Word 1 Sept. 12	\$175	Word Sep 22, Oct 4, 17	\$145
WordPerfect 1 Sept. 14	\$175	Advanced Word Oct 31	\$145
WordPerfect 2 Sept. 8	\$175	PRIMA TRAINING CENTER 207-3900 E Hastings, Burnaby,	
Displaywrite 3 Level 1 Sept. 26	\$175	294-4567. Using WordPerfect, Advanced WordPerfect	\$150
Displaywrite 4 Level 1 Sept. 9	\$175	PROFESSIONAL TRAINING ASSOC., 502-1185 W. Georgia	
WordPerfect Level 1 Sept. 2	\$175	St. 681-5903.	
WordPerfect Level I Sept. 20	\$175	MS Word 4.0 Level I Sept. 20-21	\$350
Word Level I Sept. 27	\$175	WordPerfect Level I Sept. 7-8	\$350
WordPerfect Level II Sept. 28	\$175	WordPerfect Level II Sept. 9	\$175
WordStar 2000 Level I Sept. 8	\$175	UBC Centre for Continuing Education	
DROP-IN Sept. 24		Courses held at Microcomputer Lab, Old Bookstore, UBC	
DRAKE COMPUTER TRAINING 100-1111 Melville 669-8789		Using MS-Word 4: An Intro Sept. 20-Oct. 11	\$185
Intermediate WordPerfect Sept. 26	\$175	Using WordPerfect Intro Sept.20-Oct.11	\$185
Introduction to MultiMate Sept. 9	\$175	VANCOUVER COMMUNITY COLLEGE 875-8200	
Introduction to Display Write 4 Sept. 20	\$175	Intro to WordPerfect Sept. 12,26	\$145
Advanced WordPerfect Sept. 13	\$175	Intermediate WordPerfect Sept. 12	\$145
Introduction to WordPerfect Even. Sept. 13	\$175	Advanced WordPerfect Sept. 14	\$145
Introduction to WordPerfect Even. Sept. 14	\$175	Using WordPerfect Sept. 20,24	\$175
Introduction to WordPerfect Sept. 7	\$175	Intro to Multimate Sept. 9	\$145
Introduction to WordPerfect Sept. 15	\$175	Intro to MS-Word Sept. 6,19	\$145
Intermediate WordPerfect Sept. 8	\$175	Intermediate MS-Word Sept. 1	\$145
Introduction to Microsoft Word Sept. 12	\$175	Advanced MS-Word Sept. 26	\$145
Introduction to WordPerfect Sept. 23	\$175	VANCOUVER SCHOOL BOARD 736-7241	
Intermediate MultiMate Sept. 19	\$175	Vancouver Technical, 2600 E. Broadway	
KWANTLEN COLLEGE, P.O. Box 9030, Surrey, B.C. 588-		WordPerfect, MSWord, WordPerfect, MSWord	\$90
4411. Word Processing Micom/Wang Sept. 20-Nov. 1	\$250	VAN. SOFTWARE CENTRE 300-1190 Melville St 669-9800	
Sept. 24-Oct. 22	\$250	Call for starting dates.	
Microsoft Word Intro Sept. 22-29	\$140	Intro to Multimate Adv. II, Sept. 15,24,28	\$180
MICROAGE LEARNING CENTRE 3609 W 16th Ave 222-1010		Multimate Advantage II - Inter., Sept. 8,21	\$180
Call for starting dates.		Introduction to WordPerfect, Sept. 10,14,29	\$180
DisplayWrite, MS Word, WordPerfect	\$175	Word Perfect Inter., Sept. 6,22	\$180
PBSC TRAINING CENTRE 1350-1140 W. Pender St 689-7272		Introduction to MSWord 4, Sept. 2,13,30	\$180
DisplayWrite 4 level 1 Sept. 8	\$175	Microsoft Word 4, Sept. 7,23	\$180
DisplayWrite 4 level 2 Sept. 21	\$175		
Microsoft Word 1 Sept. 1,15,28	\$175		
Microsoft Word 2 Sept. 12,27	\$175		
Microsoft Word 3 Sept. 19	\$175		
Multimate Advantage II 1 Sept. 14	\$175		

PERSONAL COMPUTER TRAINING INSTITUTE

PERSONALIZED IBM P.C. COMPUTER COURSES

BUSINESS AND HOME

Beginner and Advanced Classes

Introduction to IBM-PC	
and popular software programs	\$150
Lotus 123 for beginners	\$150
Lotus 123 Macros	\$150
Bedford Accounting	\$150
Introduction to Word Perfect 4.2	\$150
ACCPAC Accounting System	\$150
Intro to DOS	\$75
Bedford Accounting	\$150
Typing tutor	\$75

Day Courses - Over 3 day period 9:30 - 1pm

Night Courses - 3 hours/ night, 6 - 9:30pm

Limited enrollment per class !

Corporations Please Call for Lab Rental Rates

Call for times and dates

682-5448

(A division of Eva Vincente Media and Talent Group)
200 - 247 Abbott Street, Vancouver, B.C. V6B 2K7

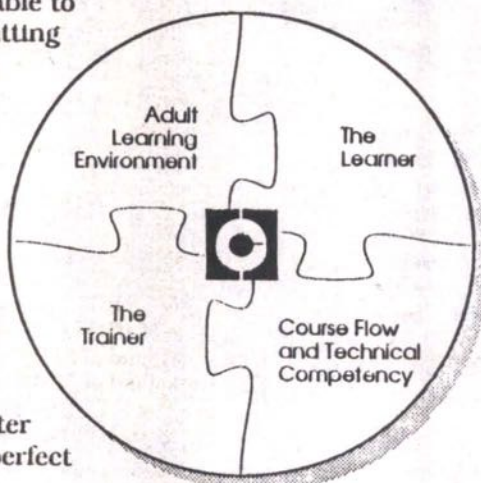
Computerizing your business?

Our corporate objective is to implement training programs that will improve productivity and user satisfaction with computer software products.

ONCOURSE is able to achieve this by putting together all of the various pieces of the training puzzle.

We have been accredited as the training centre of choice by major software manufacturers, including Lotus, Microsoft, Computer Associates, Wordperfect and Xerox.

Since 1984, ONCOURSE has helped thousands of people learn how they can use a computer as an effective tool for their jobs.



Call today and talk to us about what you need.

(604) 669-9800
Suite 400, 1190 Melville Street,
Vancouver, B.C. V6E 3W1
Fax: (604) 684-9837

Other offices in Ottawa, Timmins,
North Bay and Sudbury

ONCOURSE
Learning Centres™

INDEPENDENT TECHNICAL SERVICES INC.

RICK CUCH DEAN GREENWOOD
#265-167 W. 2nd Ave. VANCOUVER BC V5Y 1B8

PROFESSIONAL NETWORK SPECIALISTS

873-3900

NETWARE SUPERVISOR COURSE

Since the introduction of Netware there has been a growing concern regarding qualified Netware Supervisors. The end-user can take other Supervisor courses, but these are usually expensive and the end-user must take time out of their schedule to visit the training centers. At ITS we can quickly and efficiently train existing employees with-in the company to become in-house Netware Supervisors on their Network.

The ITS Supervisors Training Course is professionally laid out to train the inexperienced Netware user. As our qualified instructors train the end-user on their equipment, the students can follow along making notes in our specially developed ITS Netware Training Manual. The advantage to supplying our ITS Netware Training Manual is that after the course the student can quickly refer to the manual for information regarding supervisor duties in a form that they understand. The ITS Netware Training Manual is the key to our success and is the answer to supporting your own Network.

Netware is a trademark of Novell Inc.

Introduction Course
3hr. one person \$250
6hr. one person \$400
each additional person \$100

Includes:
ITS Training Manual

Netware Training
Operating System
Hardware
Bootdisk
Login-scripts
Print-Spooling
User-Security

ALL END-USERS MUST HAVE A
DEALER REFERENCE #

ALL END-USERS MUST HAVE A
DEALER REFERENCE #

Getting Listed on the Vancouver Stock Exchange

Is the VSE "Easy Money" for Hi-Tech Companies?

To most people, Vancouver, British Columbia, is world-renowned for its breathtaking beauty as well as having been the site of the immensely successful Expo '86 World's Fair. But for an increasing number of U.S. high-tech companies, Vancouver means two things - cheap money and a stepping stone to senior stock exchanges in the United States.

The drawing card for these American companies is the Vancouver Stock Exchange (VSE). Traditionally, the VSE has been anything but an exchange for high-technology stocks. For most of its 80 years, it has been a penny stock exchange of junior mining companies. Many serious blue-chip investors have looked with disdain on VSE companies, regarding them as having only two assets: moose pasture with questionable potential and smooth-talking promoters who never quite seem to get burned when their ventures fall flat. The occasional scandals that have plagued the VSE during much of its history only reinforce this perception. But times have changed at the VSE. The outdated and frantic trading floor which brings screaming buyers and sellers together - one of the last of its type in the world - soon will make way for a silent computer system, which conversely will be among the most modern. This change is in keeping with the evolving composition of the exchange. Of the 2,100 companies that were listed on the VSE at the end of 1987, about 30 percent were industrial and technology companies - up from little more than a handful a few years ago.

Early 80's Crash Precipitated Changes

The crash of oil and mineral prices during the early 1980s precipitated this transformation at the VSE, forcing the exchange to look at new areas of underwriting - including the computer industry. And so far, this diversification in underwriting has paid off. Exchange observers estimate that at least 25 percent of the 301 new listings in 1987, which were worth over \$1 billion, were those of industrial and technology companies.

The good news for American companies is that most of those issues were U.S. enterprises. While many of the VSE investors were once looking to buy into the next major gold rush, many now have their sights on the next Apple Computer or Microsoft, and they don't care which side of the border it calls home.

Costs of Raising Capital Here Considered "Reasonable"

"Vancouver is one of the better markets in the world for companies that are trying to raise less than \$5 million," says Robert Byford, partner in charge of the consulting group at the Vancouver office of Peat Marwick, which has been involved in over 100 underwritings during the past two years. "The VSE is one of the best-kept secrets. For about \$115,000 (in listing costs and fees), you can raise \$500,000. That's pretty reasonable."

Even Vancouver's most ardent supporters admit that the VSE is unlikely to become another NASDAQ (National Association of Security Dealers Automated Quotations). NASDAQ, which is based near Washington, D.C., is the blue-chip exchange for emerging companies, some of which have assets of more than \$1 billion. But the VSE, nonetheless, is one of the few exchanges where a company with a limited track record and only \$100,000 (Canadian) of assets can hope to raise between \$500,000 and \$1.5 million by selling shares to the public. By comparison, an emerging company - one without profits - must have \$8 million in capital to secure a NASDAQ listing.

"The average high-tech company on the VSE has (annual) sales in the \$400,000 range and needs \$1.5 million to \$2.5 million to make it a \$25 million company," Byford says. "If anything, VSE investors want to make sure that a company has enough money to do things properly."

Investors Not Likely to Finance R&D

However, VSE investors are very reluctant to finance research and development. In the early 1980s, they were badly burned by Chopp Computers Corp. Inc., a company that claimed it would develop the ultimate supercomputer, which never materialized. Now investors want a solid business plan written by a proven management team with a product in hand. If anything, the money raised on the exchange usually is intended for marketing and manufacturing. But management is the key, Byford adds. "First-rate management can do something with a second-rate product, but a second-rate management is unlikely to impress many investors."

Besides providing access to quick money - most VSE listings can be concluded within 90 days - Vancouver gives a company the opportunity to establish a track record which could prove useful if it later wants a NASDAQ listing. By the end of 1987, about 100 companies were listed on both exchanges, and many will drop Vancouver when they become more established on NASDAQ. "This (NASDAQ) connection is a useful feature that you can't overlook," explains Bruce Stuart, Peat Marwick's high-technology consultant.

Stuart also maintains that the recent surge in high-tech listings on the VSE has led to the creation of a pool of high-tech expertise in Vancouver that in turn will stimulate more technology listings. "There're some very talented people here."

According to John Hislop, corporate finance director of the Vancouver-based Odum Brown Ltd. brokerage firm, Vancouver investors aren't afraid of taking risks.

VSE: "Speculators - Not Investors"

"Most people who buy stocks on Vancouver aren't investors, they're speculators. When they buy mining stocks, they don't expect many of them to hit anything, but when they do hit, they want something big," he adds. "Sometimes the craziest idea will attract the most attention on Vancouver because it has the greatest potential to make money."

While many VSE observers maintain that the best way to succeed



on Vancouver is to sell a company and product that can be described in fewer than 25 words, Hislop says it helps when a company produces a product that most investors are familiar with. "The average investor isn't going to read a 50-page prospectus. The easier it is to sum up the company, the simpler it is to sell the idea to investors."

According to Hislop, Vancouver investors are skeptical of software developers and favor hardware manufacturers, especially those with established lines of credit and visible markets. One example he points to is a California company that has developed a system to block off faulty sections of an EPROM (a type of read-only memory that can be erased and reprogrammed by the customer), a product that has caught the attention of a major Korean electronics manufacturer. "You need good management and a good product concept. It helps to have a major sponsor behind the venture," he says.

A company seeking a Vancouver listing, Hislop says, can expect to pay between \$15,000 to \$30,000 in legal fees; about \$15,000 for accounting; some \$25,000 for a technical report; \$10,000 in printing and mailing; and \$5,000 for travel expenses. Brokers' sales commissions are in the 10 percent to 15 percent range.

The Mechanics of Getting Listed

The mechanics of getting a VSE listing are straightforward. Hislop suggests that the company first identify an accounting firm that specializes in Vancouver listings that in turn will recommend several brokers and security lawyers. "Talk to several brokerage firms and make sure you feel comfortable with them," he says.

Several brokerage firms specialize in underwriting VSE securities. But few are willing to commit themselves to buying all of the company's shares for resale to the public at a profit. Most will agree to a "best effort" and will take a commission in addition to receiving warrants. The brokers are crucial in maintaining the investors' interest in the company after it goes public.

Byford of Odum Brown believes a U.S. company also should file full registration and disclosure documents with the Securities Exchange Commission in the United States to avoid charges of promoting unregistered stock in the U.S. "Pretend the border doesn't exist," he says. This filing will cost in the \$30,000 range.

One U.S. company that was pleased with its decision to be listed on the VSE was Cumulus Technology Corp. of Palo Alto, CA, says Peter Henderson, the company's vice president of finance. "Cost was a big reason why we wanted to go to Vancouver. There was also a higher probability that we would have more control on when and how we would be listed. If we had gone to another market, it could have been dragged out a lot longer."

"We felt Vancouver was more of a venture-capital type of exchange. It feels more comfortable with startup companies and we felt very comfortable with them," Henderson adds.

In November 1986, the 1-year-old company spent \$60,000 in legal and accounting fees to raise \$1 million (Canadian) to help with the design and manufacturing of video-display terminals and monitors. The company also has raised another \$3 million in private placements. Cumulus will begin selling its line of products this year. "Eventually we will try for a NASDAQ listing," Henderson adds. "But we want a good history of sales before we apply."

Scandals Frequent

But there are disadvantages to the Vancouver Stock Exchange. One of the major problems is the frequency of scandals that have rocked the institution, in part because of loose regulations. While scandals aren't confined to only Vancouver, the ones that do occur in that city are more closely identified with the VSE than, for example, was the Ivan Boesky affair tied to the New York Stock Exchange.

The exchange's most infamous scandal occurred on Black Friday, Oct. 12, 1984, when Beauford Resources Ltd. collapsed and investors lost an estimated \$30 million. In sentencing promoters Enrich Brunnhuber and Engelbert Robert for fraud and theft, Justice John Bouck turned to the jury and said: "Ladies and gentlemen, I don't know how many of you are going to rush out and invest in the

stock market after this. I suspect not many." In 1986, the VSE got another black eye after three stocks tied to billionaire arms dealer Adnan Khashoggi collapsed, once again leaving many investors holding almost worthless paper.

Former VSE Chief Resigned For A Song

To make matters worse that year, British Columbia's chief security regulator, Michael Ross, resigned after he announced he had won a California song-writing contest and was going into the music business. This was followed by the resignation of the chairman of the B.C. Securities Commission for reasons that were not clear. However, the superintendent's position was filled by Neil de Gelder, an attorney from one of the province's top legal firms, while Doug Hyndman, a 36-year-old deputy secretary of the B.C. Treasury Board, was named chairman of the securities commission. They both made it clear they intend to improve the quality of the VSE and instigated a series of cease-trade orders and disciplinary actions.

But few people expect the scandals to come to a complete halt. Says Odum Brown president Tony Hepburn: "People have to recognize that (the VSE) will always be speculative. Therefore, from time to time, there will be a few companies that fail. If Vancouver was to place more restrictions, there would be fewer incidents but there would be a lot less capital raised."

Overall, the VSE had a rough year in 1987. Like most stock exchanges, it hit a record peak during the year, with its index reaching 2,045 points in May, but was devastated on Black Monday, Oct. 19, and finished the year at 1,150 - 15 percent lower than it had started 1987. At the same time, the Dow Jones average of 30 industrial stocks gained 2.3 percent during the year despite the more than 500-point plunge on Black Monday.

With the crash, the listing of new securities on the VSE has come to a near halt. It remains to be seen whether the activity will pick up. But Hislop of Odum Brown is convinced it's only a matter of time. "Not all of the money disappeared and these people will have to do something with it sooner or later." Because of the Black Monday crash, Byford of Peat Marwick expects to see fewer new listings in 1988, but predicts the companies will raise more money. "The quality of the companies will be even better (in 1988). They will be bigger, better and fewer."

Many VSE Stocks are Foreign Owned

With a population of 3 million people, British Columbia doesn't have enough investors to own the \$5 billion worth of stocks listed on the VSE. Exchange officials estimate that about 35 percent of VSE stocks are owned by Western Canadians while another 15 percent is owned by Eastern Canadians. U.S. and European investors each account for about 25 percent of the stock ownership. More money from the Pacific Rim is expected to flow into the exchange when a brokerage firm from tiny but highly industrialized Hong Kong becomes a trading member of the VSE. About 40 firms listed on the exchange conduct most of their business in Hong Kong, and most observers expect Pacific Rim money soon to start playing a more major role in the exchange.

Computerized Trading

The \$9 million computerized trading system, which will be phased in during 1988-1989, also is expected to boost trading activity, says Alfred T.M. Woo, exchange vice president. "In Taiwan, their trading volume increased 10 times when they installed a computerized system. I expect that our system will have a positive effect on the speed and accuracy of trades and will minimize the loss of trading opportunities through human error."

So why should a company go public and sell off part of its action - especially when its owners are convinced that they have a hot product? The answer usually is that going public is the best way of financing a company through the manufacturing and marketing phase without surrendering total control to outside investors or banks - if indeed they are willing to part with money. "A company goes public when it needs capital or wants liquidity but doesn't want to lose control," explains Woo.

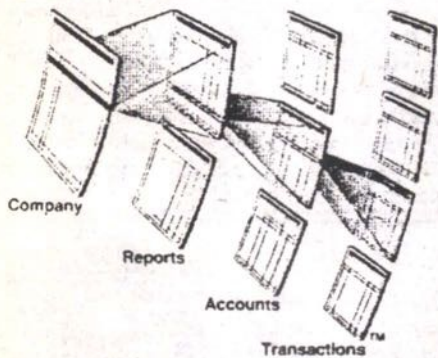
Continues on Page 38

Look what's Happening in Accounting

NEWVIEWS

The Visual Approach to Accounting

Unmatched Power and Flexibility



As a Businessperson, you rely on information to keep your business competitive. **NewViews** Accounting Software, with unmatched power and flexibility, gives you the information you need, when you need it. **NewViews** is the only accounting package to win the PC Magazine Award for Technical Excellence. Why? Because it uses state-of-the art technology to provide you with the most powerful and

versatile accounting system ever developed. If you want a simplified, intuitive accounting system, fast and flexible reporting, and information as current as you can type, then look at **NewViews**. Thousands of people across Canada, from novices to experts, use **NewViews** for their businesses. Find out for yourself why **NewViews** is quickly becoming the most popular accounting software in Canada. To learn more about **NewViews** or attend a free seminar, call:

TXL MANAGEMENT SYSTEMS INC.
Authorized Master Dealer & Certified Consultants
207-111 W. Broadway,
Vancouver (604) 876-7117



PRIMA BOOKS & TRAINING CENTRE
Authorized Dealer & Training Centre
207-3900 E Hastings St.,
Burnaby
(604) 294-4567

Free Introductory Seminars
Sept. 21, Oct 19
9:30-12 noon
Holiday Inn on Broadway

Training Workshop
Sept. 19 & 20 Intro to News Views
Sept. 26 & 27 Intermediate
Oct. 17 & 18 Intro to News Views
Oct. 24 & 25 Intermediate

Call Prima for PC Lab Rentals (10 AT Class Computers)

UBC

CENTRE FOR CONTINUING EDUCATION
COMPUTER SEMINARS & WORKSHOPS

FALL 1988

Take the Opportunity & Learn with Us.

We are popular for our teaching excellence, the practical experience we offer and a modular approach — for beginners to advanced.

Call today and we'll send you our Fall schedule

222-5276

(see several courses listed in the calendar of this Newspaper).

THE UNIVERSITY OF BRITISH COLUMBIA

SERVICE SECTOR



SAVE HOURS!!!
Let us keyboard enter your text material.

Documents saved as ASCII text files
Returned via modem or 5 1/4 diskette.
Available 7 days a week
Reasonable: 1-1/12¢ per word
Professional and Confidential

ALTERNATE PAPER ROUTE 689-3946
STE. 505-1360 Hornby St. V6Z 1W5



We offer services designed to meet a variety of conversion requirements:

- Disk to Disk
- Disk to Laser Type
- Disk to High Quality Type
- Hard Copy to Disk
- Hard Copy to Laser Type
- Hard Copy to High Quality Type

Jim Reich
President

Suite #105A
1675 West 8th Ave.,
Vancouver, B.C.
V6J 1V2

Telephone:
(604) 732-1416

Microbase Systems

The New Generation in Computer Services

- * consulting & training
- * networking

- * custom programming
- * database management

We also sell computer hardware, software and accessories.

SPECIAL

IBM 640K turbo compatible with 40MB hard drive, 1.2MB floppy and MS DOS/GW basic for only \$2299.⁰⁰.

Microbase Systems
4658 55th Street
Delta BC V4k 3P7
[604] 946-2338

Call now for a
FREE
1/2 hour consultation.

BYTE COMPUTERS

Get the power to be your best on the computer that works the way you do.
The Apple® Macintosh™



Training Classes
Monday to Friday, 3 pm to 6 pm

Intro to the Macintosh	\$65.00
Microsoft Word	\$65.00
Microsoft Excel	\$65.00
Microsoft Works (2 days)	\$130.00
Bedford Simply Accounting (2days)	\$130.00



2151 Burrard St.,
Vancouver, B.C., V6J 3H7
(604) 738-2181

Authorized Dealer

1987 Apple Computer® Inc. and the Apple logo are registered Trademarks of Apple Computer Inc.

ribbons!

Allmakes:

APPLE IMAGEWRITER DMPBROTHER 501/701-711 C 3500-40 CEN-
RONICS 101-103, 300 CITIZEN 1200 D 1 EPSON ERCO
FUJITSU 320/830 HENLETT PACKARD 4224 MINI MANNE
KAN TALLY 1000 NEC ORIDATA 292 OLIVETTI 121-
211 OLYMPIA ES 601-701 QUME SPTINT 1,3,5 RADIC
SHACK DMP100 1212 STAR N810 TEXAS INSTRUMENT 850-
WANG 2231W, NC, ND

and more!



Central Business Machines Ltd.
684-4545

MURATA FAX

MURATA FAX (M1200) \$1200
(18 SECOND FAX, G2 & G3)
SHARP FO-300 \$1850
SHARP FO-420 \$2100



CONTINENTAL COMPUTER
47 W. BROADWAY, VANCOUVER. 874-7147

COMPUTER SERVICE

Authorized Service Centre

Atari ST Memory Upgrades
Cables & Accessories

Fast
Turn-
Around
Time

- ATARI
- COMMODORE
- AMSTRAD



4738 E Hastings St., Burnaby B.C. 291-2261

The Shareware Shelf: DOS Tutorials

DOS Tutors

The scenario: You have just returned from the store, computer boxes in hand. Quickly, the packages are ripped open. You scan the components. It's a breeze. Plug this into that, this over here, these into the surge protector (you did remember to get the surge protector, didn't you?). Here's the on/off switch. The fan starts up, the monitor flashes. We're up and running, yes-sir-ee. The guys at work told you all about using the DOS boot disk. Yup, there's the "A:" prompt, just as expected. You've done it all, without even opening an instruction book. Six pats on the back for that! Now, insert that new game disk you purchased to have some fun. What's this? It's not doing anything. Why won't it work? Oh well, guess you had better read the booklet on this. Step 1: Make a back-up disk BEFORE starting the game. Store the ORIGINAL in a safe place. Step 2: FORMAT a disk and COPY all FILES to formatted disk. Step 3: What is this booklet talking about? Look at the DOS manual (what is D-O-S anyway?). This thing must be written in Japanese! What am I going to do now? The first disk that a NEW computer purchaser should purchase is a DOS Tutor. It may seem a little trivial, but it sure makes you look

smart. They are easy to start and usually guide you through the major DOS commands without fear of damaging your computer (the program controls all functions and only simulates the actual command).

Commercially, these can be rather expensive, but you can purchase quality SHAREWARE Tutors for a very small investment (under \$10.00). COMPUTER TUTOR is just one of the many available. COMPUTER TUTOR (Computer Knowledge, P.O. Box 91176, Los Angeles CA 90009) is my favourite. It consists of 7 lessons from the "IBM Keyboard" to writing "Batch Files". I could have saved myself a lot of grief if I had this disk when I started.

The first lesson on the IBM keyboard should be done ONLY if you have an original IBM keyboard. Clones need not apply.

Lesson 2 describes the History of computers and makes for some fascinating reading on how computers have developed over the last century.

Lesson 3 "Basic Terms and the CPU" continues where Lesson 2 leaves off, and I strongly recommend this lesson.

Lesson 4 "Input/Output & Storage Devices" continues with computer facts and terminology. The reading of these lessons will greatly assist you

when you attempt to read a DOS manual for more information and reference.

Lesson 5 "PC-DOS Commands" is where most people will want to start, but don't forget to go back and do lessons 2 to 4. This lesson covers operating systems (you finally find out what DOS really is), booting (explained), device names, and common DOS commands (DIR, FORMAT, ERASE, RENAME, COPY, DISKCHK, etc.). This is the KEY lesson for NEW users.

As you expand your horizons, or if you purchased a hard disk with your system, Lesson 6 "Subdirectories" becomes an important lesson. Here PATH, PATH NAMES, and TREE commands are explained. These commands are the scariest to new users. I really don't know why, but it took me a long time to get around to making subdirectories, but I couldn't live without them now.

Lesson 7 "Batch Files" should really be Lesson 6. Subdirectories is semi-advanced, but Batch Files is necessary to even the very new user. Look on almost any boot disk and you will find "Autoexec.bat" or "Config.sys". These are necessary files and you should know how to write and use these. "Batch Files" goes on from these and

describes the more advanced features of writing these 'programs', and even 'seasoned' users could gain some insights from this lesson.

COMPUTER TUTOR uses interactive instructions (you issue the command), and then it further describes the results/consequences of what you have just done. You can actually hardcopy (print) the lessons as you go so that you have notes and reference materials for future use. This is the BEST Shareware disk available for any computer owner. The 'registered' price of this disk is only \$12.00 US. For \$25.00 US you also receive the "Tutorial Development Aids - Disks and Manuals" to create your own tutorials - perhaps for your kids or spouse.

Gord Simmonds is owner of Sim-Com Services a company which specializes in the distribution of Shareware programs. 585-2326



MS-DOS COMPATIBLE PUBLIC DOMAIN SOFTWARE

APPLICATIONS

- ☐ GENEALOGY ON DISPLAY (2 DISK SET) - The number one genealogy program in the library. Now goes with #594 to have a complete package.
- ☐ LABELMAKER - Our favorite label file and maker. Menu driven.
- ☐ GENEALOGY FT - From Pine Cone software. To help you track those "sketches" in your closet.
- ☐ FAMILY HISTORY (2 DISK SET) - Family history, ancestor and descendant charts. Sample programs.
- ☐ FORM LETTERS - Lots of samples of the most commonly used business letters. Modify!
- ☐ MAIL MASTER - After creating your mailing list, send mail to the special only "target" groups you specify.
- ☐ THE WORLD DIGITIZED (3 DISK SET) - (1 of 3) - Locations of over 100,000 points of interest.
- ☐ MSDOS-CPM/80 INTERFACE - CPM lovers! This program allows you to transfer information between and emulate CPM & MSDOS.
- ☐ MSAY MSAV - Is an unusual personal finance manager. After several interrogatives it predicts your future.
- ☐ WORLD - Statistics and Demographics for all of the nations of the world.
- ☐ FREEWAY PAYROLL SYSTEM (3 DISK SET) - Freeway Payroll Program. So flexible you may have to let that extra bookkeeper go and do it yourself.
- ☐ IN CONTROL (3 DISK SET) - This comprehensive business system puts you in control of marketing and sales information.
- ☐ FRONT OFFICE (3 DISK SET) - A control system designed to manage direct sales prospecting, sales orders, and cost/profit analysis.

COMMUNICATIONS

- ☐ PS-TALK - The classic "freeware" communication program.
- ☐ RBBS (4 DISK SET) - Our most popular bulletin board system. Become a SYSOP and start a bulletin board.
- ☐ QMODEM - Without a doubt the fastest and best communications software you can buy at any price.
- ☐ FIDO NET - Bulletin Board System. Perhaps the easiest to run.
- ☐ PROCOMM - Communication software that makes a hackers dream come true.
- ☐ WILDCAT BBS SYSTEM - QMODEM type BBS system that will allow the novice to become a SYSOP. Good documentation!

DATABASE MANAGERS

- ☐ PC-DBMS - A relational database management system that provides on-line help and screen editing functions.
- ☐ PC-FILE (2 DISK SET) - The King of Shareware database managers. A second disk now makes PC File faster, easier to use, and much more powerful. You should upgrade to this newest version.
- ☐ PC-PROFESSOR - Learn Basic the easy way. One of the best tutorials on BASIC.
- ☐ EQUATOR - A teaching tool for math, science and finance.
- ☐ PC-DOS HELP - Type "help" for the DOS command you forgot.
- ☐ PC-TUTORIAL - A first course in computer usage covering various aspects of MS-DOS. Good!
- ☐ PC PROMPT - Fascinating on line memory resident DOS helper that also supports BASIC, EDLIN, DEBUG, and TURBO PASCAL.
- ☐ LANGUAGES - A foreign language tutor that includes French, Spanish, German, Italian, and Hebrew.

FINANCE

- ☐ PORTSWORTH PACKAGE - Evaluates your ever changing stock portfolios.
- ☐ PC-GENERAL LEDGER - An exceptional accounting system. Used by some CPAs.
- ☐ PC-CHECK MANAGER - Keeps multiple checkbooks in balance.
- ☐ TAX FILE DBS - Tax record keeping system that saves you money on April 15.
- ☐ LOAN AMORTIZATION - For output to screen or printer. Lots of on-line help.

UTILITIES

- ☐ MR BILL (2 DISK SET) - Prepare invoices, client report, audit trail, etc.
- ☐ PC ACCOUNTING SYSTEM (2 DISK SET) - General purpose ledger system that includes payroll, depreciation, accounts receivable/payable, inventory processing 1099's and a good general ledger.
- ☐ PC-ACCOUNTING SYSTEM - See above.
- ☐ PC-PAYROLL - Handle all payroll problems with this complete menu-driven payroll system. Includes taxes, reports, forms, etc.
- ☐ PURCHASE ORDER SYSTEM - Keep track of all vendors and outstanding purchase transactions with this comprehensive system.

GAME

- ☐ TOP GAMES - The most requested arcade type games.
- ☐ ARCADE GAMES - Another goodie bag of top Arcade games.
- ☐ MISC. GAMES - Good selection of educational, adventure, and arcade games.
- ☐ PINBALL RALLY - You asked for it! Here are three pinball games that vary in complexity. PINBALL, RAIN, TWILZON2.
- ☐ THE GOLDEN WOMBAT OF DESTINY - This is one of the best text adventure games in the library. Discover The Forbidden City.
- ☐ "CRONUM'S CASTLE" ADVENTURE GAME - Emaon Adventure. Great!!!
- ☐ "LORD OF THE UNDERLAND" - Another adventure module. Encounter Orcs, Hobgoblins, Goblins with an Enchanted Sword.

GRAPHICS

- ☐ PC-PICTURE GRAPHICS - Drawing package allows you to zoom, color, and store pictures.
- ☐ PC-KEY DRAW (2 DISK SET) - A small CAD system. New version makes this a highly versatile drawing system. Lots of demonstration files.
- ☐ PC-GRAPH - Allows user to create graphics from PC-File report files.
- ☐ DANCADD3D (2 DISK SET) - Allows the composition of 3-D wire frame animation. Without a doubt there are no commercial programs available like this regardless of the price.
- ☐ DANCADD3D DEMO (2 DISK SET) - DAN-MOVIE animates the screen. Saves the screen at 4 million pixel resolution! Customers tell us it's the greatest!

LANGUAGES

- ☐ CHASM - Cheap assembler with tutorial.
- ☐ EXTENDED BATCH LANGUAGE - Ver 2.0 a user-supported utility from Seaware.
- ☐ P-BASIC - NASICA work-a-like for clones, etc.
- ☐ ESIE - Build and generate an expert system.
- ☐ PROLOG & UNIFORTH - Complete with editor and documentation.
- ☐ VISIBAL-PASCAL - A useful Pascal compiler for learning Pascal. Allows the user to watch the execution of code.
- ☐ TINY PASCAL COMPILER BUILDER - Learn to create your own Pascal Compiler and language compiler/savings and investment portfolio. User friendly!

MUSIC

- ☐ PC-MUSICIAN - Compose music on your PC. save and play again.
- ☐ PIANO MAN - Play your PC keyboard like a piano.

PRINTER UTILITIES

- ☐ EPSON PRINTER UTILITIES - Spool, set up routines all designed for Epson codes.
- ☐ PRINTER UTILITIES - Smorgasbord of utilities and tools.
- ☐ SIDE WRITER - Sideways work-a-like to allow the printing of large reports sideways on a printer. Source code included.
- ☐ WSMX80 - Allows WordStar to print more ways than you imagined on an Epson Compatible printer. Useful for mathematical and scientific notation.

SPREADSHEET

- ☐ TURBOCALC/AS-EASY-AS - Two exquisite spreadsheet programs. AsEasyAs is a 1-2-3 Work and look-a-like. Produces expert x-y graphs and bar charts.
- ☐ LOTUS 1-2-3 TEMPLATES AND MACROS - Why spend hours of writing your macros when these are ready made? Modify them yourself.

As seen in PC Magazine



Systems that don't byte back! Are you concerned that your Ventura Publisher and AutoCAD software won't run properly on a Local Area Network?

IMT introduces North America's most exciting and reliable LAN system, LIFENET by Univation



Suite 608, 837 W. Hastings St.
Vancouver, BC V6C 1B6
(604) 683-5542

Integrated Micro Technology Inc.



"RJM turns your computer into an expert instructor"

- ☐ Desktop Training Solutions
- ☐ Computer Delivered Courses
- ☐ Expert Systems
- ☐ Memory Resident Job Aids
- ☐ Videodisk Training
- ☐ DOS Glossary
- ☐ DOS Productivity Tools

301-1190 Melville Street
Vancouver, B.C. V6E 3W1
681-5251

VSE Article - Con't from previous page.

Many Companies Try to Go Public Too Late

But according to Vancouver attorney Douglas Garrod, many companies decide to go public as a last resort when it's too late. Taking a company public is something that requires months of planning, adds Garrod who has helped more than 200 companies do just that. "The biggest pitfall is that the decision is done too late, private funds have been exhausted and it will take four to six months to go public, at which time the company will be in worse financial shape and it will be more difficult to sell the issue. Most companies think about doing it as a last resort to raising money," he says.

But before a company gets involved in the VSE, it must be familiar with the ground rules. Much of the exchange's activities are dominated by promoters, a unique breed to the VSE, who pitch their companies to an array of potential investors. The promoters are not registered with any securities commission and usually work in exchange for free or cheap shares. While some promoters can raise millions of dollars through a network of world-wide investors, others are known for their ability to run up stock prices before dumping their shares.

But promoters aren't the only ones who can unload their shares quickly. Investors who aren't principals in the firm, but bought into the company before it went public, may sell 25 percent of their shares at the time of the initial public offering (IPO) and sell the rest during the next nine months. It's little wonder that the average VSE shareholder only holds on to his shares for four to six weeks. Rollercoaster Prices

It also isn't surprising that some stocks have soared as high as \$120 before plunging back into the realm of penny stocks. Vancouver isn't a place for long-term investors. A poorly prepared company can see its stock prices rise and then plummet to nothing - a feat that is unlikely to interest NASDAQ underwriters. Garrod believes that a company must make sure that it has a broker or promoter beating the drum to maintain investor interest after the company goes public. The company can't afford to slip into anonymity, he warns. "The first six months are very crucial." Byford of Peat Marwick also cautions companies to be leery of people who claim they can easily secure a listing. "You have to avoid some of the people walking around Southern California who maintain they can raise \$5 million to \$10 million on the VSE in return for \$5,000 to \$10,000 to prepare a business plan. Check out their credentials very carefully."

By John Spilker. Reprinted with permission from Resolution Business Press (Milestone Publications 251-7675) and was contained in Northwest High Tech 1988: A Guide to the Computer Industry of the Pacific Northwest and British Columbia. The book is available in several local bookstores for \$14.95. A DOS database version retails for \$49.95.

CLASSIFIEDS

ELECTRONIC BULLETIN BOARDS (BBS)

CATALYST 872-6968

Political activist board run by Public Information Exchange Society (PIX) 24 hrs. 3/12/2400 Baud.

Kaypro User's Group Opus 271-5934 CPM & MSDOS Software free.

RBBS-CYVR. 270-0810

FANTASY PARADISE BBS 263-2682, 300/1200, Young people oriented.

WONDERWORLD 937-7542 300 Baud.

SUNSET BLVD. 298-3530.

Streets of California, 300B Commodore. 876-6287. Social Board Teens. 800 User.

Phoenix BBS 520-6112.

The Shoreline BBS Multi User 8-line 300-2400 Band \$1.20/hr. 736-2197.

NEC BBS. NEC Canada Ltd. Free of charge Multispeed & Multisync support. 1200 Baud 687-7144; 2400 Baud 662-7732; 300 Baud 689-8601.

SERVICES

- * Consulting & Training
- * Database Design
- * Custom Programming
- * Tutoring in WordPerfect, RBASE, Assembly Language, MSDOS
- * Hard Disk Backup/File
 - Maintenance
- Debbie Cooper
Consultant
(604) 738-9440

PROGRAMMER seeks work with Databases (dBase & Clipper). Leave messages for Andy 298-5966.

TECHNICAL WRITER for software & hardware user manuals. Years of experience with complex applications & accounting systems. 325-9609.

EXPERIENCED PROGRAMMER seeks work with DBASE III Plus, Clipper, BASIC, FORTRAN, C and financial applications. 876-3398 or Leave message.,

EXPERIENCED TECHNICAL WRITER Available to write software or hardware user manuals: full time or on contract, your premises or mine.
Good manuals: • Reduce customer support costs • Increase user satisfaction • Help market your product Phone 325-9609

HARDWARE

APPLE IMAGEWRITER II LQ, 15" carriage never used. Warranty. \$1,500. Evenings 738-8379.

MAC HARD DRIVES

- GENERAL COMPUTER FX40 \$1300
- SUPERMAC DATAFRAME 20XP \$850 •
- FOUR 256K MACINTOSH SIMMS (120 nanoseconds) \$500
- Call Hari 736-2919

APPLE 40SC HARD DISK AND TAPE BACKUP C-W 5. 40 MB tape, 4 months on Apple Care, suggested \$6,019, asking \$3,420. Karen or Paul 731-7917.

EPSON EQUITY II 40 Meg Hard Drive & Epson FX 286 Wide Carriage Printer & accessories. \$1,999. 872-3451 eves. & wknds.

ZENITH 2181 Laptop (MS DOS 3.2) 640K 2x720K floppies, \$1,800. NEC P6 Pinwriter Dot matrix 24 Pin 216-65 CPS, \$650. James 731-7779.

APPLE II + Clone C/w 2 Drives Gemini Star 15X printer, Joystick, software 291-6202

Apple IIE, Monochrome Monitor, 2DD, excellent condition, \$1,200 o.b.o. Word Perfect and Imagewriter II also available. 224-2568.

3-1/2" Disk labels, 5 colors \$5/100; \$35/1,000. Call Richard 533-0465.

Radio Shack 64K COLOR COMPUTER 2, with magazines, 2 joy sticks, accessories, and lots of software. Asking \$120 OBO. Phone 322-5924.

RADIO SHACK COLOR COMPUTER, Disk Drive, Modem, Accessories. Lots of orig. software, \$150 O.B.O. 322-5924.

Atari 130XE with 1050 Disk Drive 2 deluxe joy sticks, 100 programs, 3 carrying cases for disks & computer. Disk Drive Power supplies \$325 o.b.o. Paul 299-8270.

SOFTWARE

Wine Database

Winebase - the new IBM PC/XT/AT wine education software package. Colorful maps, 1000 full wine descriptions, complete meal, sweetness and price cross referencing, built-in dictionary, easy one touch pictorial based decisions, and more. 5 disk package, includes free wine course, introductory offer \$79.95. For more information write: Sunshine Systems, 548 Beatty St. Vancouver, B.C. V6B 2L3 or phone 662-8598.

WANTED

Wanted: Atari shareware programs. Tom 877-0885, 6-8 p.m.

Non Profit Foundation needs computer equipment. If you are upgrading your equipment and your old hardware will be collecting dust, we will be more than happy to take it off your hands. Tax receipts available. Telephone 684-4148. Physical Medicine Research Foundation.

FREE Personal Ads!

Personal ads are free Business ads are \$20 for 25 words or less plus 25¢/word \$15 for a boxed ads Mail to The Computer Paper 3205 W13th Ave., Vancouver V6K 2V6 or Call 733-5596

WANTED:
Software Dealers
to promote established
Dental Software Package.
526-3212.

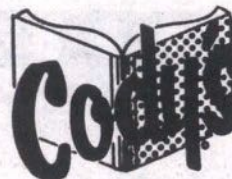


The Booksellers' Best Sellers



Title	Author	Publisher	Price
AUTOCAD			
Mastering Autocad 9	Ohura	Sybex	\$43.50
Inside AutoCad 9	Raker/Pice	New Riders	\$53.95
Advanced Techniques Autocad 9	Thomas	Sybex	\$38.95
DATABASE			
Advanced dBase III+ Programming	Liskin	McGraw-Hill	\$32.50
dBase III+ Pocket Reference Guide	Liskin	McGraw-Hill	\$8.95
Understanding RBase	Simpson	Sybex	\$30.75
DESKTOP PUBLISHING			
Looking Good in Print	Parker	Ventana Press	\$35.95
Inside Xerox Ventura Publisher	Berst	New Riders	\$29.95
Mastering Ventura II	Holtz	Sybex	\$32.95
Using Aldus Pagemaker	Parker	Bantam	\$24.95
DOS			
Running MS DOS 3rd Edition	Wolverton	Microsoft Press	\$33.95
Peter Norton's DOS Guide	Peter Norton	Prentice-Hall	\$28.95
Mastering DOS	Robbins	Sybex	\$28.95
HARD DISK MANAGEMENT			
Managing Your Hard Disk	Beruner	Que	\$29.95
Hard Disk Companion	P.Norton	Prentice Hall	\$31.95
Quick Ref.Gde. to Hard Disk Mgmt.	Wolverton	Microsoft	\$7.95
INTEGRATED SOFTWARE			
Mastering Framework II	Hergert/Kamin	Sybex	\$34.95
Mastering Symphony 4th Edition	Cobb	Sybex	\$38.95
MS-Works for the PC	Cowart	McGraw-Hill	\$29.50
MACINTOSH			
Hypercard Developer's Guide	Goodman	Bantam	\$29.95
Inside Macintosh VI V	Apple Inc	Addison-Wesley	\$37.95
Mastering Excel Mac	Townshend	Sybex	\$34.95
MISCELLANEOUS			
Learning Bedford	Purbhoo/Borel	Addison-Wesley	\$29.95
Amiga Machine Language	Wolf	Compute Books	\$29.95
PROGRAMMING			
Complete Ref. Turbo C	Schildt	McGraw-Hill	\$36.95
MS C Programming IBM PC	Lafore	Sams	\$38.95
C Programming Language 2nd Ed.	Kernigan/Richie	Prentice-Hall	\$39.95
SPREADSHEETS			
Using 123 Special Edition	Que Corp	Que	\$34.95
Complete Reference Quattro	McCoy	McGraw-Hill	\$37.50
Quattro Companion	Cobb/Crane	Cobb	\$32.95
WORD PROCESSING			
Using WordPerfect Version 5	Stewart	Que	\$29.95
Mastering WordPerfect Version 5	Kelly	Sybex	\$30.75
Using MS Word 4.0	Chase/Zager	Que	\$27.95

This List is sponsored by B.C.'s largest retailers of Computer Books
It is compiled monthly by Compulit Distributors Inc.



New West Quay:
810 Front St.
New Westminster
525-9850
Westwood Mall:
2-3000 Lougheed Hwy
Coquitlam
464-5515



3727 W. 10th Avenue
Vancouver, B.C.

(604) 222-2221



103 4600 #3 Road, Richmond, B.C. Canada V6X 2C2 (604) 278-7638



We make it easy
to touch tomorrow!
FRIENDLYWARE
COMPUTERS INC.
437-3113
3499 Kingsway Vancouver
(2 blocks west of Boundary)



UBC BOOKSTORE

6200 University Blvd, Vancouver B.C. 228-4741

386 DREAM MACHINE

Ultimate Performance at an
Extremely Low Price

CEX 386/20 IBM COMPATIBLE

- *80386-20 CPU Running at 20MHz, 0wait state.
- *Phoenix ROM BIOS
- *2MB Static Column RAM Memory
- *One 1.2 MB Floppy Disk Drive.
- *65 MB Hard Drive with SCSI Controller 1:1 Interleave factor.
- *Hercules compatible graphics Card w/ printer port.
- *AT Enhanced Keyboard. *Keytronic K101)
- *Real time clock with battery backup.
- *AT case with keyboardlock, power/turbo/disc light.
- *14" Amber Monitor
- *8 Expansion slots. (2-8bits/1-32bit/5-16bit)
- *200 Watts CSA/UL approved power supply.



\$5,399

386 Performance at a 286 Price!

CEX 286 IBM AT COMPATIBLE

- *80286 CPU Running at 8 or 12MHz.
 - *AWARD ROM BIOS Ver. 3.08 W/built-in setup.
 - *640K RAM Memory.
 - *One 1.2 MB Floppy Disk Drive.
 - *Hercules compatible graphics Card w/printer port.
 - *AT Enhanced Keyboard. (Keytronic K101)
 - *Real Time Clock with battery backup.
 - *AT Case with keyboard lock, power/turbo/disc light.
 - *16 Bit Hard/Floppy disk controller card.
 - *8 Expansion slots. (2-8bits/6-16bits)
 - *200 Watts CSA/UL approved power supply.
 - *Amber Monitor W/tilt & swivel base.
 - *40 MB Hard disk drive. (SEAGATE, 40ms).
- OPTIONS:**
- | | |
|------------------------------------|-------|
| Add up to 1024K Memory (512K 80ns) | \$199 |
| 3.5" Microfloppy disk drive 720K | \$149 |
| Serial/Paralle Port Card | \$95 |
| 80287-10 Math Co-processor | \$459 |
| MSDOS & GW BASIC V3.03 | \$125 |



\$2,150

One Year Parts and Labour Warranty



Vancouver office:

1041 West Broadway, Van, B.C. 733-1535

Richmond office:

#10-4200 No. 3 Road, Rich, B.C. 276-9588

Edmonton Office:

13222 - 118th Ave., Edmonton, Alberta, T5L 4N4

Bondwell Laptop from \$2150

Special Features
1200 Baud Modem
Turbo Speed
1 Megabyte of RAM



- *80C88 microprocessor operating at 4.77 or 8 MHz (switch selectable)
- *8087 numeric data coprocessor socket
- *One megabyte of random access memory
- *Super twisted liquid crystal display with backlight
- *80 column text display
- *640 by 200 pixel graphic display
- *Two 720 kilobyte 3 1/2" microfloppy disk drives (Dual Floppy Drive Version)
- *One 720 kilobyte 3 1/2" microfloppy disk drive and one 20 megabyte Winchester 3 1/2" hard disk drive (Hard Disk Version)
- *95 key low profile keyboard
- *Real time calendar/clock with battery backup
- *Built-in rechargeable battery for system power supply
- *1200 bps Bell/CCITT Hayes compatible modem
- *Standard RS232C communication port
- *Centronics parallel printer port
- *RGBI video port
- *NTSC composite video port
- *MS-DOS 3.21, GW-BASIC 3.2, EASY 1.5 Word Processor, and utility programs

TOTALLY AWESOME

The COUGAR/286 Gives You More Power And Performance.....
It Deserves More Than A Second Look.



Elegantly crafted with latest Technology in Design and Performance, The Cougar/286 Personal Computers runs at a Blazing Speed of 12 MHz. There are more Standard features incorporated such as Multimode Graphic Display, up to 4MB RAM Expandability and more. Totally compatible with today's MS-DOS, XENIX, Novell Netware Operating System and also designed to meet the challenge of tomorrow.

Test run a Cougar/286 yourself today; only you will feel the difference and the rest will just be "Love At First Sight". After all the Cougar/286 is more than just a good investment, it's also good looking!!!

COMTEX MICRO SYSTEM INC.

CANADA: 128 S.E. MARINE DRIVE VANCOUVER,
B.C. V5X 2S3

TEL: (604)321-2229 FAX: 604-321-5132

TELEX: 04-508642 OS. MICRO VCR